Successful Growth Monitoring

SOME LESSONS FROM INDIA

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ABBREVIATIONS

INTEGRATED CHILD DEVELOPMENT SERVICES

ANM	Auxiliary Nurse Midwife
CWG	Children's Working Group
CNC	Community Nutrition Centre
CNI	Community Nutrition Instructress
CNS	Community Nutrition Supervisor
CNW	Community Nutrition Worker
DPNO	District Project Nutrition Officer
GIRH	Gandhigram Institute of Rural Health
GM	Growth Monitoring
HSC	Health Sub-Centre
KAP	Knowledge Attitude and Practice
MO	Medical Officer
MPHW	Multipurpose Health Worker
ORT	Oral Rehydration Therapy
PHC	Primary Health Centre
PC	Project Coordinator
PEM	Protein Energy Malnutrition
SSLC	Senior School Leaving Certificate
SF	Supplementary Feeding
TPNO	Taluk Project Nutrition Officer
TINP	Tamil Nadu Integrated Nutrition Project
WWG	Women's Working Group

TAMIL NADU INTEGRATED CHILD DEVELOPMENT SERVICES

ANM	Auxiliary Nurse Midwife
AWW	Anganwadi Worker
CDPO	Child Development Project Officer
GM	Growth Monitoring
ICDS	Integrated Child Development Services
KAP	Knowledge Attitude and Practice
LHV	Lady Health Visitor
NIPCCD	National Institute of Public Cooperation & Child Development
ORT	Oral Rehydration Therapy
PHC	Primary Health Centre

CHILD IN NEED INSTITUTE

GM	Growth Monitoring
MM	Mahila Mandal
PVOH	Project Voluntary Organizations in Health

PUBLIC HEALTH CENTRE

ANM	Auxiliary Nurse Midwife
GM	Growth Monitoring
OPD	Out Patient Department
ORT	Oral Rehydration Therapy
PEM	Protein Energy Malnutrition
PHC	Public Health Centre

EXECUTIVE SUMMARY

FEATURES OF SUCCESSFUL GROWTH MONITORING LESSONS FROM INDIA

Growth monitoring, properly done, is an excellent tool for assessing the growth and development of a child, for detecting the earliest changes in growth and to bring about appropriate responses to ensure that the growth continues uninterrupted. As such, it contributes to the promotion of child health and nutrition and is an educative tool for the mother and the family. It helps to bring about behavioural changes in the mother with regard to child feeding, appropriate response to illness and an understanding of the various factors which play a role in growth and development of the child.

Growth monitoring is being used in several countries for the past decade or so. The concept of growth monitoring is frequently misunderstood and is often confused with periodic nutritional assessment i.e., the periodic weighing and classification by nutritional status categories. In periodic nutrition assessment the important element of communication with the mother and transmission of appropriate practical messages aimed at promoting growth are absent. The potential of growth monitoring is not realized most often because it is not done. Thus, numerous countries describe failed growth monitoring activities because of the lack of impact on mothers without having ever recognized and dealt with this important element. What other strategies and methods that can be used to improve quality of growth monitoring and increase the impact of growth promotion?

UNICEF sponsored case studies of three rural based primary health care programmes and one urban programme, of which growth monitoring is an integral part. The case studies were aimed to review the process of growth monitoring within these programmes and to identify features that might have contributed to effective growth monitoring.

Growth monitoring is used on the largest scale in the Integrated Child Development Services (ICDS) programme which has been in operation for ten years covering over one fifth of India's administrative blocks (approximately 130 million population) and is slated for rapid expansion.

Two other programmes chosen for the case study, though operating on a smaller scale are of interest because of some innovative features in design, training and implementation that might provide useful lessons for other programmes. The Tamil Nadu Integrated Nutrition Programme (TINP) covers 17.5 million people in 9 districts of Tamil Nadu state and is in operation since 1980. The nutrition programme was added to the existing Maternal and Child Health services to strengthen and to increase awareness of the crucial role of weight gain and, nutrition and functions in more or less a vertical manner.

The Child In Need Institute (CINI) in West Bengal, is a non-government organization which provides a package of health and nutrition services with other activities for social and economic development to a rural population of 70,000. The fourth project, the Public Health Centre at Madras represents an example of the use of growth monitoring in an urban clinic setting.

FEATURES ASSOCIATED WITH SUCCESSFUL GROWTH MONITORING:

What are the key determinants of success for growth monitoring?

There are certain basic principles and prerequisites but the modalities could vary from one setting to another. Keeping this in view and based on our observations of the four case studies, the following may be considered the attributes of a successful growth monitoring programme:

1. GM AS A PART OF THE PRIMARY HEALTH CARE PACKAGE

Growth monitoring should be an integral part of the primary health care services, as in ICDS. It provides a basic monthly contact in which not only is growth monitored and promotional nutrition messages effectively transmitted to mothers, but also appropriate public health centre (PHC) activities such as immunization, oral rehydration therapy (ORT), birth spacing services are provided.

The PHC reinforces the growth monitoring and promotion activities and growth monitoring substantially improves the coverage and success of PHC. In TINP, where growth monitoring is more of a single vertical type program, these synergistic and mutually reinforcing effects are not as evident.

2. COMMUNITY CENTRE AND HOME BASED

Growth monitoring is community centre and home based in both ICDS and TINP with focus on the individual child. This is how it should be. In CINI, a village clinic based approach has succeeded in achieving only about fifty percent coverage for monthly weighing. Even a village based weighing point will not get the desired coverage. Home based growth monitoring is necessary and indeed desirable to achieve the desired 80-90 percent coverage and to be able to reach the very young child, who is not brought to the centre because of other preoccupations of the mother.

3. TARGET AGE GROUP

Growth and nutritional problems are most critical among children upto 3 years of age even though they are also frequently seen in subsequent years. TINP has shown that children in the 0-3 years age group can be attracted to the centre for weighing without the inducement of a food supplement. Effective coverage is achieved with household monitoring. It may be advisable to dispense with growth monitoring after the age of 3 years to save the worker's time which can be used to maximise health and nutrition education of the mother and strengthen the various other components of primary health care. Maximum impact is also likely to be achieved when growth monitoring is restricted to the initial 3 years.

4. GROWTH MONITORING AS THE OBJECTIVE OF A PROGRAMME

To achieve the desired impact, that is, normal regular growth, the objectives have to be clear and well defined and the training and other activities should be geared to that. In programmes like the ICDS with the present objectives and orientation of training, the exercise of weighing the children tends to be used to identify beneficiaries for nutrition supplementary feeding and to improve the nutrition grade rather than to recognize optimum growth and to detect early growth faltering. It is necessary therefore, that the planners and decision makers realise and are convinced of the basic preventive and promotional objectives of growth monitoring. It is only then that the training will become relevant and the worker will respond appropriately as soon as growth begins to falter and will look for the reasons why. The ultimate objective of growth monitoring is to achieve changes in mothers behaviour through education using the growth card, which in turn will result in better child health.

5. HEALTH WORKER

There is one village level worker for 700-1000 population in these projects, which seems satisfactory. The worker should be a female, preferably, a successful mother herself. It is important that she belongs to the village. Education up to VIII grade is a great asset in acquiring a high level of skills in growth monitoring. The qualities of the worker are very important. The worker needs to be highly motivated, spontaneous and articulate and take pride in the esteem that the job brings. While voluntary mothers make very useful contribution in TINP and CINI, a suitably paid and satisfied worker seems an essential prerequisite of the programme. A good growth monitoring worker clearly understands that the mother is the focus of all her action. She respects her ability and

skills and believes that able mothercraft is not related to literacy alone. Many workers in TINP and CINI have graduated from women's working groups and this offers additional advantages. The time distribution for various activities should be such that it allows her sufficient time for home visits because that is crucial for community involvement and education. Her skill in weighing, plotting, interpretation and education of the mother must be of high quality. She must know how to effectively use the growth card for education. Her knowledge about feeding must be practical, relevant and flexible enough to be adapted to the needs of the individual child. It is indeed creditable that even without the stated objectives and with emphasis on nutrition assessment, some of the workers in the ICDS programme have realised the value of growth monitoring by observing the growth lines and discovered spontaneously that the opportune time to respond is just when the growth begins to falter.

The worker must know how to use the various health education materials that she might have.

6. TRAINING

TINP offers very useful lessons in training. The brief initial training of about 2 months is followed by intense, repeated, purposeful, methodical and action oriented in-service training that accounts for the excellent quality of workers in this project. The workers actually participate in the predetermined number of problem solving exercises during the 40 percent training time in the field. The learning objectives are well defined and known to the staff. There is emphasis on developing skills in education and communication. The batch size of 20 to 25 for classroom and 5-7 for field training is optimal. A training manual in local language is given to all the workers for routine use at the time of initial training. It is meant for the staff at all levels. The instructions are task and action oriented. The focus is on how to achieve specific objectives (e.g. how to find the cause of growth

failure in a child; how to launch a campaign). The workers must be taught the use of the growth card to explain the interplay between food, illness and growth and use this as the foundation for giving messages on feeding and response to illness.

7. SUPERVISION

The quality of supervision is good when the ratio of supervisor to workers is 1:10 as in TINP. The supervisors in ICDS cover 20 Anganwadis each, which results in infrequent visits to those farther away and lack of uniformity in the quality of supervision. Some of the useful features of the excellent supervision in the TINP are greater emphasis on technical rather than administrative matters, check list of tasks to be done during each supervisory visit and a well defined list of purposes. Based on this clear and objective check list of specific activities which should be carried out, direct feedback is provided to the worker who immediately understands where his performance is deficient and needs extra attention. A check list is thus a means of objective verification and immediate feedback. The supervision is not restricted to the centre only, but extends to the household level which is the nodal point of mother-worker interaction. Further improvement could be achieved by allocating time for individual supervisory tasks for each visit. The first line supervisor is supervised by the instructor at the block who again has clear cut methodology and objectives. On the other hand, in the ICDS, the block level supervision is more administrative rather than technical and supportive. Supervision of supervisors is as crucial as that of the basic worker.

8. COMMUNITY PARTICIPATION:

Excellent examples of community participation in growth monitoring activities are seen in TINP and in CINI. To achieve maximum community participation, it is important that people become aware of growth and are convinced of the benefit of growth monitoring.

An effective education and communication programme is essential to achieve this objective. The mechanisms of achieving these are several. The growth card is used to promote understanding of relationship between food, illness and child's growth. Providing other essential services like ORT, deworming and immunisation along with growth monitoring promotes its acceptance and participation of the community.

The innovative features of community involvement in some of the programmes are:

I. Formation of local women's working groups:

a) Members take responsibility for 5-10 neighbouring houses.

b) Act as motivators, educators, organisers and growth monitoring workers.

It is important that mothers are active participants. They should help with weighing, plotting, ORT, mass campaigns, group discussions and in the functions at the centre. This has been achieved with considerable success in the TINP and CINI projects.

II. Youth Club: Educators and Motivators.

III Teacher - children working groups:

a) School as the base

b) Growth monitoring and nutrition in school curriculum.

c) Act as motivators and educators for the community.

EDUCATION AND COMMUNICATION

For education and communication to play an important role an adequate emphasis, budgetary allocation and a clear strategy are essential. In TINP and to a considerable extent in CINI, educators and communication experts play a major role in the programme. Their strategy is to create a demand for growth monitoring among mothers and leaders through person to person contacts and through mass campaigns. The educational messages are described and recommended for their effect on growth, saying that if these are acted upon, the child will get better growth. The workers should be involved in the development and trained in the effective use of the education and communication aids. Up and down feed back, stress on innovations and creativeness are important lessons from TINP. A major contribution of communication activity is to sustain the motivation among workers in growth monitoring which tends to slacken with time.

Education needs to be targeted to a wide audience; mothers and mother substitutes, opinion leaders, politicians, teachers, social workers, school children and public at large. The education message must be based on prevailing KAP and improved with frequent evaluation. Very effective use of local folk theatre, singing during marriages, peep shows, slogan competitions, films etc. is seen in TINP and CINI. Radio programmes where the Anganwadi worker is an animater and forming of listening clubs is evident in some ICDS programme areas. The educational messages need to be made relevant in the local socio-cultural milieu.

NUTRITION EDUCATION

Conversations with mothers and workers brought out a major lacuna among workers and supervisors in these programmes. The workers do not provide the mother with an understanding of the amount, bulk,

and frequency of diet appropriate for the child to achieve optimal growth nor teach them how to make the family diet suitable for a child or to increase energy density. While there is emphasis on Vitamin A rich foods, the emphasis on the major energy rich food is lacking. Very careful attention should go into the design of the content of the messages if we are to not only inform the mother but motivate her to change her behaviour. The messages should be simple, practical and appropriate to the tradition and cultural milieu of the community. Similar attention is required for messages regarding feeding during illness.

11. BACK UP HEALTH CARE SUPPORT

The two important elements of the response to early growth faltering are education of the mother, search for the cause of deviant growth and provision of appropriate remedial measures. Common illnesses and infections are usually the precipitating cause. This necessitates prompt referral to the health personnel and indeed their active involvement in the programme. This seemed to be a common weakness in the programmes reviewed. The latent period before referral should be short and the guidelines and logistics of referral should be clearly defined. There should be active involvement of the health personnel in the whole growth monitoring strategy.

12. GROWTH CARD

Since the mothers involvement is essential in growth monitoring she must become the keeper of a suitably designed, easily understood growth card which would become her proud possession. There is a distinct difference in the mother's understanding and perception of growth monitoring depending on whether the card is kept by her or by the worker. In TINP the growth cards are retained by the mothers and most of them could interpret the line trends. This was

not so in projects where cards are kept with the workers. If necessary, a special card may be used at the centre for effective follow up of growth faltering and malnourished children only till the time their growth slopes assume normal direction. The messages in the card should be few, relevant and simple. Often the cards are overcrowded and messages are seldom absorbed by mothers. The card should have 100 gm. markings so that the weight can be charted accurately.

13. WEIGHING SCALES

The programme can succeed only if the basic ingredients and tools are available. The weighing scales should be accurate, locally manufactured, durable and easy to maintain, repair and transport. It should be easy to use by workers and mothers. It should have 100 gm. markings. The readability on the dial or bar should be easy, so that both the workers and mothers can use it easily and correctly.

14. LOGISTICS AND SUPPLIES

Efficient supply, maintenance and replacement of weighing scales, growth cards and other items is crucial if optimum results are to be obtained for growth monitoring. In some situations, it may take months instead of days to repair or replace a broken weighing scale. At times new types of scales may be introduced into a programme without adequate training and preparation. The supply of growth card should be regular so that their availability is never in doubt.

Growth monitoring is useful only if it is impactful. The critical constraints are lack of clarity about the growth and development role of growth monitoring, poor training, supervision and support, lack of understanding of each workers role and responsibilities, and insufficient and interrupted supplies and maintenance.

CASE STUDIES

I. INTRODUCTION

Growth is a key indicator of child health. An interplay of ignorance, inappropriate feeding practices, inadequate diet and infection result in one third to half of the children remaining undernourished in the developing world. Malnutrition is a key determinant of the high childhood mortality.

Growth monitoring is advocated and used as a pivotal activity to maintain children on the path of normal growth and development and to recognize early growth faltering. It has been appropriately defined as:

> **"A process of sequential measurements for the assessment of physical growth and development of individual and the community with the purpose of promoting child health, human development and quality of life."**

The process involves regular weighing for early identification of growth faltering with appropriate and prompt follow up action. The ultimate target is to educate and achieve change in mother's behaviour towards normal growth and development of the child. The major focus is on child feeding and appropriate response to illness. Growth monitoring provides an excellent opportunity to provide other primary health care services, to improve women's participation and status and interaction between mothers and workers in a **predictable** and **frequent** manner.

Growth monitoring has been used in several countries during the last two decades. The purposes for which it has been in use include

early detection of faltering growth with followup action or of more severe grades of malnutrition and rehabilitation. There is now a consensus that **growth monitoring must become an activity by and for the mother.** While there is agreement on its usefulness, there are controversies and doubts among policy makers, health workers and professionals as to itsfeasibility and implementation in different countries, each with its unique primary health care system. The question often raised is, "Where has it been done?"

This case study was sponsored by UNICEF to review the process and practice of growth monitoring in four health care projects in India with a view to identify factors that may have contributed to the success of the programme as well as identify operational constraints. Three of the projects selected are large rural primary health care programmes with growth monitoring as an integral part. While the design and implementation strategies are unique to each programme, an effort was made to identify positive features that have a broader application. The fourth case study is an example of use of growth monitoring in an urban public health clinic.

PROJECTS VISITED

Integrated Child Development Services (ICDS)	Rohtak, Haryana	Beri, Dadri, Kathura, Rohtak (urban)
Tamilnadu Integrated Nutrition Project (TINP)	Madurai, Tamilnadu	Kottampatti
Child in Need Institute	Daulatpur, 24-Parganas; West Bengal	Bishnupur I and II, Tollyganj
Public Health Centre	Madras, Tamilnadu	Mamblam

II. METHODOLOGY

The investigators visited each project location for a period of one week during March-April 1986 to obtain an impressionistic view of the growth monitoring operation in the project. An overview of the programme was obtained during discussions with the project leaders at the state and district level. Except for the initial forenoon, the rest of the time was spent at the village level.

The mothers (50-100 at each project) were interviewed at several nodal points of growth monitoring activities including at households. The households visited were selected by us. These represented a fair mix of households located near the centre and the periphery of the village. The investigators interviewed all the mothers together. The assessment of mothers and workers was done with the help of a pretested short questionnaire. Attempt was made to evaluate the level of exposure and awareness of growth monitoring; their motivation and perception; knowledge of optimal feeding practices during health and disease relating particularly to their own children; and awareness of early faltering of growth or severe malnutrition as a cause of real concern and their response.

The mother's skills in weighing, plotting in the growth card, interpretation of growth lines were assessed using her own child's card as also three other cards showing normal growth velocity, growth faltering and grade III malnutrition. KAP about ORT and immunization was also ascertained.

The activities at Community Nutrition Centres or Anganwadis, Health Subcentres, Primary Health Centres and Clinics were observed during peak working hours. The growth charts employed were carefully examined. About ten front-line workers and 5-7 supervisors at different levels of hierarchy were interviewed in each block visited. The documents related to the training and supervision procedures were examined. The project leaders were met on the first and last day of the visit.

PROJECT ONE

INTEGRATED CHILD DEVELOPMENT SERVICES

(BERI, DADRI, KATHURA AND ROHTAK (URBAN) BLOCKS, DISTRICT ROHTAK, HARYANA)

Contents

I. BACKGROUND

The Integrated Child Development Services (ICDS) scheme was initiated in 1975 as a response to the recognition of the impoverished economic, social and environmental condition surrounding infants and children in India.

The ICDS, India's most comprehensive and ambitious programme is both preventive and developmental in design. It aims to increase child survival and improve the quality of survival among children. It hopes to reduce prevalence of malnutrition, improve the growth status of children and prepare them through non-formal education for a more successful formal school education. The ICDS also promotes maternal health and nutrition because there cannot be child health without maternal health.

The programme was started on an experimental basis in 33 of India's over 5,000 administrative blocks (each block has a population of about 100,000). These blocks were considered to be the most deprived and with high representation by members of schedule castes and tribes.

The initial experience was considered successful resulting in rapid expansion of the programme till about 1,300 blocks were covered by the end of 1985. The programme provides immunization and health checkup to 10.4 million children, supplementary nutrition to 6.1 million children and 1.2 million pregnant and nursing mothers, and non-formal education to 3 million children. The coverages included are expected to double during the Seventh Five Year Plan by 1990.

The specific goals of the programme are:

- reduce the incidence of low birth weight and severe malnutrition among children;

- bring down the mortality and morbidity rates among children 0-6 years old;

- reduce school dropout rates through early stimulation programmes for children 3-6 years old;

- provide the environmental conditions necessary for the mental, physical and social development of children;

- enhance the ability of mothers to provide proper care for their children; and

- achieve effective co-ordination at the policy and implementation levels among government departments to promote child development.

II. ORGANIZATIONAL STRUCTURE (Annexure I)

The ICDS projects are selected and approved by the Centre in coordination with State Governments. Their location and selection are in need-based rural, urban or tribal areas. It takes about 12 to 18 months after approval for the project to become fully functional in a block.

The most frontline worker is an Anganwadi Worker, who belongs to the village and is selected by the community to serve a community of 1,000. About 20 Anganwadi workers are supervised by a Supervisor and both are always female. The Child Development Project Officer (CDPO) is responsible for the entire block i.e. 100 Anganwadis. The Anganwadi Worker is assisted by a helper, who is often a local traditional birth attendant, but could be anyone else from the village.

The health component consists of ANMs, LHVs and the Medical Officers of the block Primary Health Centre.

III. THE ROLE OF KEY PROJECT STAFF

Child Development Project Officer (CDPO)

- Provides link between ICDS and government administration.
- Secures Anganwadi premises.
- Is in-charge of 4-5 supervisors and 100 AWWs.
- Identifies beneficiaries and ensures supply of food to the centre, and flow of health services.
- Monitors programme and reports to the State Government

Supervisor

- Responsible for 20-25 Anganwadis.
- Acts as mentor to AWWs.
- Assists in record keeping, organizing community visits, visits of health personnel.
- Provides on-the-job training to AWWs.

Anganwadi Worker (AWW)

- Selected from the community.
- Provides direct link to children and mothers.
- Assists CDPO in survey of community and beneficiaries.
- Organizes non-formal education sessions.
- Provides health and nutrition education to mothers.
- Assists PHC staff in providing health services.
- Maintains records of immunization, feeding and pre-school attendance.
- Liaises with block administration, local school, health staff and community.
- Assists other community-based activities, e.g. family planning.

The AWW assumes a pivotal role in the ICDS structure due to her close and continuous contact with the community. As the crucial link between the village population and the government administration, she becomes a central figure in ascertaining and meeting the needs of the community she lives in.

IV. GROWTH MONITORING ACTIVITIES

Periodic weighing

One of the job responsibilities of the AWW is to weigh all children 0-6 years of age every month. The weighing is done during the first week of the month at the Anganwadi itself or whenever convenient. Children under 3 years of age who do not visit the Anganwdi regularly are weighed at home. **The weighing at home is the main mechanism which brings the Anganwadi worker and the mothers of this nutritionally vulnerable group in contact with each other.** This is also the only major opportunity for imparting nutritional education.

The coverage for monthly weighing in the **6 months to 3 years** age group is about **50 per cent** of the eligible children. Between 3 to 6 years of age about 70 per cent of the children are weighed monthly. There is a significant variation among different Anganwadis in the extent of coverage.

Efforts are being made to record **birth weight** and periodic **weights in the 0-6 months** age group but the coverage is **still low** (15-20 per cent). In some Anganwadis, weighing during 0-6 months is not being done as yet.

The weighing was previously done with Salter spring type scales. Recently, the Anganwadis are being supplied with the Tansi beam type scale. In some Anganwadis weighing scales are either very old or out of order. In most places, however, the weighing scales are well maintained. All the workers assessed are skilled in measuring weights both with Salter and Tansi scales. None of the helpers assessed can weigh with the recently supplied Tansi bar scale but many did so with the Salter scale.

Interpretation and follow up action

The objective of the periodic weighing as understood by the whole ICDS staff is to determine the nutritional status, eligibility for supplementary feeding and need for medical attention. The promotional aspects of monitoring growth are not emphasized and so an appropriate response to early growth faltering is not initiated.

However, in village Dhandla, all the four Anganwadi workers are exceptionally skilled, knowledgeable and motivated. They have spontaneously discovered the utility of responding as soon as the growth lines falter. They recognise growth faltering as the opportune time to respond. They can recite the reasons for early deviation in growth lines on several charts such as mothers being busy at harvest time, illness, lack of diet and very interestingly social factors such as female sex or mother being deserted by husband.

Here is an outstanding example of the kind of understanding about genesis of faltered growth in a child which can be achieved through a growth card by an experienced worker. Unfortunately, in most

Anganwadis, this role of growth cards is not clearly appreciated by the workers and therefore, not transmitted to the mothers. The shortcoming lies in their training which has emphasized nutrition assessment rather than growth promotion.

The followup action once grade III or IV malnutrition sets in is quite effective; weekly observation and weighing at home by AWWs, intensive nutrition education, a separate followup card and double the amount of supplementary feeds. The special cards for cases of malnutrition are filled accurately in almost all cases. These provide for weekly weight and record of morbidity. It is difficult to assess how well the referral for health check works. The ANMs and doctors visit the centre periodically and see these children. The latent period before this actually gets done is long. The description of what this health check comprises of is also vague.

Table 1 : Growth monitoring in ICDS

Centre/home based	Largely home-based for 0-36 months & Centre based for 37-60 months age group
Indicator	Weight for age
Who weighs	Anganwadi worker
Periodicity	Monthly
Extent of coverage	50-70 per cent*
Time when weighing done	Any time of the month
Who records in card	AWW
Who keeps card	AWW
Scale used	Salter, now changed to Tansi bar

*Only 10-20 per cent coverage for children 0-5 months old. Great variation in different Anganwadis.

Supplementary nutrition

Supplementary feeding should be an occasion for nutriton and health education. **The contact with mothers at the Anganwadi, however, is too short and infrequent.** Secondly, mothers of young children, most in need of education, do not come to the Anganwadi. Therefore, the AWWs will not reach the mothers of most of those in the nutritionally crucial age group unless the home visiting is regular. **The utility of the contact with the mothers can be increased by the effective use of growth chart for nutrition and health education.**

Maintenance and use of growth cards

The growth cards of all eligible children are maintained in the form of a book at the Anganwadi. The workers carry the chart book with them during home visits and record weights in them if weighing is done. At the Anganwadi, initially the workers used a register to record weights but with increasing confidence, now the plotting is done directly on the charts. **The mothers do not keep the growth chart. It is designed more for the workers.**

In most of the charts, plotting is generally of good quality. Most workers can plot the age and dot position correctly. Several, however, do not join the dots by a line, as they are not told to do so either during their training or on the job.

It is apparent that weight charts tend to be used to locate a child's position according to weight for age in relation to desired weight for that age. Thus, the slope of a child's growth curve in relation to reference lines is considered less important. This is a reflection of the programme policy wherein periodic weighing in the project focuses on identifying grade III and IV malnutrition for the purpose of nutritional rehabilitation. This conceptual flaw needs to be corrected if one aims at the optimum growth and development of the children.

Growth card as an education tool

The workers feel that only the educated mothers can understand the use and interpretation of growth charts. Some of the mothers are told the weight of the child or that he is healthy or weak. The educational potential of the growth chart is not utilized fully in the programme.

Objectives of growth monitoring pursued in the projects studied

Table 2 lists the potential objectives of GM being pursued in the blocks visited by us.

Table 2: Objectives of growth monitoring pursued

1. Detection of malnutrition and followup care.
2. Entry point for nutritional education and motivation of mothers.
3. Entry point for health care activities.
4. Monitoring impact of interventions
5. Entry point for women's participation in health and nutrition programmes.
6. Mechanism for promoting role and status of women in the community.
7. Nutritional care of ante-natal and post-natal mothers.
8. Analytical purposes.

Impressions on AWWs

Most Anganwadi workers are well-motivated and enthusiastic. They, however, give high priority to preschool education and supplementary feeding. They consider growth monitoring useful but not a pivotal or key activity. They do not consider weighing children to be a burden.

Several of the women's working group members are seen in and about the centre. The motivation is impressively high. The leadership quality is visible. Their skills in weighing and growth charting are considerable. Most can weigh correctly and fill growth cards. Their interpretation of growth lines is generally flawless.

Their knowledge about infant feeding practices, diarrhoea management, immunization, cause of deviant growth, vitamin A deficiency is uniformly good.

CNWs feel that WWG is their most effective instrument. The credit for major improvement in mothers understanding about feeding is essentially due to the excellent performance of WWGs.

Children's Working Groups

The idea behind CWGs was initiated by field workers, and is an illustration of the flexibility of the system and stress on initiative and creativity at the grassroot level. There are 1000 CWGs in Madurai district. The teacher selects the best students of the classes V-X for the group. Leader is chosen by consensus. The CWGs are used for motivating and educating mothers. They are involved with Vellupatti (folk theatre) groups, drama groups, school functions and festivals. They encourage other children to write essays on health and nutrition subjects during campaign period.

We heard three groups in different villages reciting jingles. Many members can recite these without the book. Most of them know about programme activities. They answer questions on use of periodic weighing in children and infant feeding with reasonable accuracy.

weight. There were several posters on the walls showing children being weighed and about other TINP activities, but when their children visit the PHC, the doctor does not ask for the growth card. They can weigh accurately and interpret the growth curves in the card. However, they feel that weighing and plotting are essentially for purposes of identifying children for supplementary feeding. Similar is the situation with the ANMs. They have skills but lack proper orientation and guidance. The doctors informed us that they receive only an occasional referral for children with growth faltering.

The weighing scale in the labour room (bar scale) is poorly maintained but functional. **It is vital to involve the PHC staff in the whole process of growth monitoring and referral for obtaining optimum results.**

VII. COMMUNITY PARTICIPATION

Wide and intense participation by the community is conceived to be an important objective of the project. The village elders, mothers, children and school children are chosen as the key vehicle for acheiving participation by the community.

Women's Working Groups

Most villages have a women's working group. In Madurai district, there are 1966 such groups. Each group comprises of 15-20 mothers, belonging to households at different locations within the village.

The WWGs guide and educate 5-6 neighbouring mothers. The WWG meetings are held every fortnight for 2 hours at the house of one of the WWG members. **A unique feature is that after the meeting, the whole group marches through the village raising slogans on nutrition and health.**

The skills in weighing and plotting are generally good. However, most do not calibrate zero error before weighing. Many do not join the points. The interpretation of the growth curves is weak.

The knowledge about feeding practices is generally good but without emphasis on amount of food appropriate for different ages. The quality of educational messages conveyed to mothers leave scope for improvement.

Few have a clear understanding of how to achieve greater community participation.

The workers clearly have the potential and skills to carry out a very effective growth monitoring programme. What is needed is re-training in the proper use of growth monitoring, improvement of workers skills in identifying early growth faltering, to investigate its causes and to act promptly by promoting mothers understanding and changing her behaviour through well thought-out educational messages using the child's growth card for the purpose.

V. ASSESSMENT OF MOTHERS' ROLE AND PARTICIPATION

The mothers are well aware of the Anganwadi and the AWW. Most of them feel that the Anganwadis perform a very useful role. There are a few complaints about Anganwadis being closed the entire day or sooner than scheduled and about misuse of the supplementary food by workers and supervisors.

The mothers give preschool education and supplementary feeding as the major reasons for sending their children to the Anganwadi. On direct questioning (Table 3) growth monitoring is enumerated as one of the functions. The periodic weighing is linked more to identification of beneficiaries for extra supplement. AWWs do visit their homes but often at more than a monthly interval.

Nutritional education is mainly imparted either when mothers visit the Anganwadi or during household visits by the workers. The mothers are also exposed to weekly radio programmes on health and nutrition related subjects where the AWW act as an animator and these seem quite popular.

The exposure to growth cards among mothers is low. Some are aware of the card but cannot relate to these . In all Anganwadis, mothers cannot weigh children or plot findings on growth cards. They do not interpret growth lines or nutritional status.

Most mothers can list nutritious foods for infants and children. Messages about breast-feeding and weaning at 6 months have reached most mothers and seem to be well accepted.

The knowledge about infant feeding among mothers is fair but the emphasis on bulk, frequency and amount of feeding is missing (Table 3). Many mothers agree that they reduce food intake when the child has fever or diarrhoea for fear of aggravating the illness.

Almost all say that they would feed 'dal' water rather than 'dal' to the child. The awareness of the need to make infant diets more energy dense is not apparent to the mother or the workers. The need to make education messages on nutrition more effective and practical is evident.

Messages about diarrhoea management have reached more than half of the mothers interviewed. Many can tell the correct method of preparation of sugar-salt solution. Incorrect beliefs about feeding during diarrhoea persist in almost 40 percent of the mothers.

Most mothers have had their children immunized.

Table 3: Assessment of mothers' KAP and skills

Variables	Percentages of mothers Responding in Affirmative(n=60)
(a) Growth monitoring	
- Growth monitoring is useful for my child.	70
- Understand purpose of GM	50
- Approve of monthly frequency of weighing	90
- Eligible children in household are actually weighed monthly	50
(b) Growth card	
- Produce growth cards during home visit	NIL
- Card locked up by husband/family elder	NIL
(c) Causes of deviant growth	
- Lack of dietary intake	60
- Frequent or recurrent illness	75
- Failure of breast-feeding	30
(d) Feeding of children	
- Correct duration of breast feeding	100
- Correct age for additional solid foods(6-12 months)	80
- Appropriate foods from 7 months to 2 years:	
Excellent	10
Very Good	15
Good	20
Fair	30
Poor	25
(e) Diarrhoea management	
- Aware of ORT	50
- Know correct preparation of sugar-salt solution	40
- Diet:	
Same or more than that preceding illness	30
Decrease intake	70
Increase intake for 7 days after illness	20
Superstition about useful foods	40
(f) Correct interpretation of growth card	
- Normal growth	5
- Growth faltering	15
- Malnutrition grade III	7
(g) Skills	
- Weigh a child	nil
- Plot a growth card	nil

VI. COMMUNITY PARTICIPATION

The awareness about the Anganwadis and growth monitoring is fairly wide-spread but the involvement in the growth monitoring process is low. There are no organised groups of mothers, children or youth helping the AWW with the GM activities. They contribute a cake of cowdung towards fuel for preparing the supplementary feed.

VII. TRAINING

The training courses for all levels of ICDS staff are designed and curricula developed at the National Institute of Public Co-operation and Child Development, New Delhi. The basic core curriculum is similar for all levels with additional managerial training for supervisors and CDPOs. The faculty involved with the development of curriculum includes members of the various disciplines who possess considerable work experience.

The details of training are given in Annexure 2. The key features are:

Anganwadi Worker (AWW)

The AWWs are given sufficient skills in weighing. Most of them were made to weigh children and plot charts during field training. The emphasis on joining the dots and reading the slope of the growth curves is lacking. The knowledge about initiating action for growth faltering is not communicated. These are consistent with the lacunae found during assessment of the workers. Some lacunae in the training are summarized below:

- No training manual is given to the worker but only some loose notes.

- The distribution of training time weighs heavily in favour of non-formal education and administration of supplementary feeding with less time being spent on growth monitoring.

- The AWWs are not trained to realize the potential of using growth cards as an effective tool for education of mothers.

- Contents of educational messages leave considerable scope for improvement.

- Training component with regard to techniques in achieving community participation is weak.

- There are marked differences in the knowledge and skills achieved by different AWWs. This is partly due to the fact that many centres are responsible for training and their standard varies a great deal. The individual capacity of the worker too is an important determining factor.

Supervisors

Supervisors' training also needs considerable reorientation. Presently there are no well defined learning objectives. There is no training manual given to the trainees.

We were able to observe a batch of supervisors during their field training. During the field training the instructors spend little time at the Anganwadis visited. The supervisors are expected to do most of the learning with the help of AWWs. Instructors give didactic lectures in the field rather than concentrating on problem solving exercises.

The number of children to be weighed and plotted is undetermined and unspecified, being left to the initiative of the individual candidates. Most of the supervisors do not acquire a full understanding of the potential use of growth monitoring. Their knowledge about infant feeding practices is often not practical or relevant.

There is considerable interpersonnel and inter-batch variation in the level of abilities. Again this reflects lack of learning objectives, uniform training manual and a system of evaluation.

Inservice training

Inservice training is provided during visits by Supervisors and through refresher course. All the Anganwadi workers interviewed had attended a 8-day's refresher course during the previous three years. The emphasis during the refresher course was on toy making and jingles. The workers feel that the course was not well organized and was not very helpful for their work. The lack of clear learning objectives and attention to organization details by the trainers seems to be a considerable problem.

In Dadri block, the AWWs have superb skills, knowledge and motivation which on exploring could be attributed to the on-the-job training by the Supervisors. Close linkage and greater emphasis on on-the-job training seems to be the key to high professional standards.

Similar problems exist with regard to the inservice training of supervisory staff also. Examples of good and less effective training can be seen within blocks in the same district which shows that high standards are achievable. Greater uniformity in quality of training can be achieved with carefully thoughtout and implemented training.

VIII. SUPERVISION

There is one supervisor for 20 Anganwadis. Supervisors are not able to cover Anganwadis too far away from the headquarters, as often as necessary for good supervision. This creates a lack of uniformity in the performance of different Anganwadis. In some villages where the workers are excellent, we discovered that the frequency of visits by the supervisors is much more. One supervisor for about 10 Anganwadis may be more appropriate. The supervisors are motivated and sound in their knowledge but not in the methods of supervision. Some are not clear about how much time they should devote to each task at the Anganwadi. Far too much time is devoted to registers and supplementary feeding. The emphasis on checking the skills of the workers is less. The supervisors do not visit the households with the workers often enough. The quality of education given to the mothers by the workers thus remains unchecked and unsupported. There are no checklists or job descriptions available or known to the supervisors. The quality of growth monitoring in the ICDS can be substantially improved with more sustained and purposeful supervision. The islands of excellent work show what is possible to achieve.

IX. COMMUNICATION AND EDUCATION

This is one of the weak components of GM in ICDS. Education of the community and mother on GM is weak. GM is considered in the community as of a relatively lower priority in the service package. In Haryana State, radio is used effectively for reaching the community through popular daily broadcasts on specific subjects. The mothers and community members interviewed were not exposed to any other communication aid for GM.

X. SUMMARY OF SALIENT FEATURES IN GROWTH MONITORING AND SUGGESTIONS FOR IMPROVEMENT

1. In ICDS, growth monitoring is a part of a package of health and educator service.

2. Growth Monitoring is centre and home based.

3. Children in age group 0-3 years do not usually visit the Anganwadi and for them GM is the main entry point for mother-worker interaction for nutrition and health education.

4. Monthly weighing is achieved in 50-70 per cent children after 6 months of age. The coverage during 0-3 years is low and needs to be improved through more effective home based activities.

5 The action response for children suffering from grade III and IV malnutrition is prompt and effective. However, early growth faltering is given less importance by the workers and no followup action is taken since the workers are not trained to do so..

6. The skills of workers in weighing and proper plotting are good. Improvements in interpretation of growth lines and use of growth card as an educational tool can be achieved through inservice training.

7. There is considerable variability in the quality of growth monitoring at different Anganwadis. The supervision of services is not uniform.

8. Improvements in training through development of learning objectives, more exposure to problem solving exercises and pre and post training evaluation will greatly enhance impact of growth monitoring.

9. Supervision

   (a) There is currently one supervisor for 20 Anganwadis. These are too many to cover. A more appropriate ratio is 1:10.

(b) The motivation and skills of supervision are generally sound but there is lack of uniformity in coverage and quality.

(c) Management aspects of supervision need strengthening. Purposes of supervision should be defined and reoriented more towards technical than administrative issues.

10. Logistics and Supplies: Supplies, repairs and replacements of weighing scales in the programme have to be much more efficient if growth monitoring is to be purposeful.

11. Communication Support: This appears to be the weakest component of the programme. Strong communication strategies and activities can be used to promote awareness of growth monitoring among community members, achieve active involvement of village mothers and elders and to prepare them for receiving educational and other inputs from the workers.

EPILOGUE

The ICDS programme has the potential of becoming an active instrument for growth monitoring if the objective of the programme becomes growth promotion rather than assessment of malnutrition. This necessitates shift of emphasis in the training of the AWWs and other staff to growth promotion rather than detection of malnutrition with a view to identify the beneficiaries for supplementary nutrition. Growth monitoring can then become the core of the ICDS programme with a clear understanding of the factors that promote growth and those which cause growth faltering, so that appropriate strategies could be evolved to prevent deviant growth.

Appropriate and intensive health and nutrition education and community involvement would be central to the success of the programme and these aspects should receive adequate attention during training and refresher courses. The health system too should be reoriented and involved more effectively in the whole exercise.

Special attention is necessary to ensure the constant availability of the weighing scales. Facilities for quick repair and replacement require strengthening.

ANNEXURE I

ORGANIZATION STRUCTURE OF ICDS

GOVERNMENT OF INDIA Ministry of Social Welfare	Ministry of Health and Family Welfare, Ministry of Education, Ministry of Agriculture, Ministry of Works and Housing, Ministry of Information and Broadcasting, Ministry of Energy, Ministry of Food and Civil Supplies, Planning Commission, All India Institute of Medical Sciences, National Institute of Public Cooperation and Child Development, national level Voluntary Organizations.
STATE GOVERNMENT Nodal Department designated by the State Government, mostly the Department of Social Welfare or Health	Department of Health and Family Welfare, Social Welfare, Education, Rural Development, Public Health in the State Government, Medical Colleges, Agricultural Universities, Home Science Colleges, Voluntary Organizations, and Training Institutions
DISTRICT LEVEL Collector or other Officer designated by the State Govt.	District level Officers for Social Welfare, Health, Nutrition, Education, Rural Development, Rural Water Supply, Medical Colleges, Training Institutions, Voluntary Organizations.
BLOCK/PROJECT LEVEL Child Development Project Officer	Block Development Officer, Primary Health Centre, ICDS Consultant, Block Advisory Committee, Voluntary Organizations, Social Workers.
	PRIMARY HEALTH CENTRE for a population of 30,000
SCHOOL or a population within a radius of 1 Km.	
	PRIMARY HEALTH SUBCENTRE For a population of 5,000
ANGANWADI for a population of 1,000.	

ANNEXURE II

Salient features of training key workers

Features	AWW	Supervisor	CDPO
Place	Chandigarh	Ambala	Delhi
Duration	3 months	3 months	2 months
Institution	Home Science College	Red Cross Training Centre	NIPCCD
Course designer	NIPCCD faculty	NIPCCD faculty	NIPCCD faculty
Trainers	CDPOs, instructor doctor, ANM and staff at training centres	Instructors at training centre	NIPCCD faculty, invited consultants
Contents	Child development, survey methods, family planning, nutrition, health, growth monitoring, non-formal education	Health, growth monitoring, community nutrition and Child development	Child development, accounting, finance, management, survey techniques, community organization.
Batch size	30-50	10-20	10-30
Class room: field	2:1 months	2:1 months (in Anganwadi)	
Stipend	Yes	Yes	Yes
Children weighed	Variable (5-30)	Variable (5-30)	No
Growth charts filled	Variable (5-50)	Variable (5-50)	Yes
Problem solving exercises	Few	Few	
Communication aids in training.	Slides, posters	Slides, posters	Slides, posters
Specific learning objectives	Not known to supervisors or instructors	Not known to supervisors or instructors	
Pre and post training evaluation.	No	No	Yes
Previous background	Class 10th	Graduates in Home Science	Postgraduates
Training manual given to workers	Notes given but no manual	No organized manual	No organized manual

PROJECT TWO

TAMIL NADU INTEGRATED NUTRITION PROJECT

MADURAI, TAMIL NADU

Contents

I. PROJECT OVERVIEW

Concept and design

The Tamil Nadu Integrated Nutrition Project (TINP), started with the assistance of World Bank in 1980, is aimed at evolving a replicable model of a nutrition programme which would, through adopting a risk approach, be cost effective, efficient and promote better nutrition and health practices within the families. TINP is a rural project adopting an integrated approach, combining additional inputs for nutrition services with the optimum utilization of the pre-existing maternal and child health services.

Two innovative features are the hallmark of TINP. First, child beneficiaries are identified and monitored through a monthly growth monitoring system based in villages. Secondly, supplementation is continued only as long as required for a child to achieve adequate nutritional recovery and is accompanied by intensive nutritional education of key family-members to promote permanently improved home feeding practices within the financial reach of their families.

TINP was initially intended to be a five years project started in July 1980. At present the project covers a total of 9 districts in the state, covering a total population of 17.3 million. The project is providing services through 8965 CNCs and 2723 healtl subcentres.

The project planners had anticipated that after 4 years of completion of the project, the following goals would be achieved:

(a) Fifty percent reduction in the estimated 60 percent incidence of protein energy malnutrition among children under three years of age.

(b) Twentyfive percent reduction in the infant mortality rate (then estimated at 125 per 1,000) and in child mortality rate of 28 per 1,000 children.

(c) Reduction to 5 percent, of the incidence of vitamin A deficiency in children under 5 years of age (estimated at upto 27 percent at the time of inception of the project).

(d) Reduction of 20 percent in the estimated 55 percent incidence of nutritional anemia in pregnant and nursing women.

Components

TINP comprises of the following four components:

1. Nutrition (and Growth Monitoring)
2. Health
3. Communication
4. Monitoring and evaluation

II. GROWTH MONITORING ACTIVITIES

Delivery of services

The nodal point for nutrition delivery is the Community Nutrition Centre (CNC); one for about 1500 population. The CNC is housed in a rented accommodation of 1-2 rooms in the heart of the village. The CNC is manned by a Community Nutrition Worker (CNW) who is assisted by a Helper. The CNW is a local resident mother with preferably a healthy child. She has about eight years of schooling. She is paid an honorarium of about Rs.90.00 per month. She works for 6 hours a day for 7 days a week starting at 8.00 A.M.

The CNW weighs children 3 days every month, usually in the last week with the assistance of the Helper and members of the WWGs using a Tansi Scale. Weight is recorded simultaneously in a register and a card kept at the centre. It is then transferred to the card kept with the mother. This may be accomplished at the time of weighing when the mother has the card with her or during household visits.

Other salient features of growth monitoring in TINP are outlined in Table 1.

Table 1. Salient features of growth monitoring in TINP

Features	Age Group			Comments
	0-5 months	6-36 months	37-60 months	
Centre based	70%	70%	70%	
Home based	30%	30%	30%	If child is not brought to centre, CNW/CNI/CNS visits the household
Indicator	Weight for age	Weight for age	Weight for age	
Who weighs	MPHW	CNW	MPHW	
Periodicity	Once a month	Once a month	Once in 3 months	
Extent of coverage of monthly weighing	20-25%	92%	30-40%	
Who records in card	MPHW	CNW	MPHW	
Who keeps card	Centre	Mother and Centre	Centre	Card is passed on from MPHW to CNW and back to MPHW
Type of scale used	Tansi beam type scales Cradle scale for young Children	Tansi beam type scale	Tansi or bath room scale	

Response to growth failure

The action response to deviant growth in a child may consist of active surveillance, supplementary feeding (SF), referral and education of the mother.

Children who have growth faltering but do not fulfil the criteria for SF, or those who are on SF, are subjects for more frequent contact of the CNW with the family. CNS and CNI reinforce these interactions at the households. Nutrition education is thus intensified both in terms of quality and quantity of messages.

Supplementary feeding is indicated for children with PEM grade III and IV, and those with no weight gain or weight loss (over previous 2 months in 6-12 months age group, and over previous 3 months in 13-30 months age group). The minimum duration of supplementary feeding is 3 months and the maximum is till the age of 39 months. Supplementary feeding is discontinued when the child moves into grade II or higher and following a weight gain of at least 500 gms registered over one month in 6-12 months age group and in 3 months in the 13-36 months age group.

Weighing scale

Tansi bar scale is used for weighing. The CNWs face no problem in using this scale. They are conversant with correcting zero error and have so far not encountered any accidents. Scale is free from significant breakdowns apart from tearing of the pants and on occasional loosening of the screw meant for correcting zero error.

Growth card

The growth card is designed for use during first five years. There is adequate space for illness record, immunization, deworming, indications for special care, breast feeding but not for entering start and conclusion of supplementary feeding. There are two features of special interest in the card. The divisions for recording weight are for 100 grams in consonance with the sensitivity of the weighing scale. There is a column for filling the month of weighing and age when breast feeding is discontinued.

In the cards maintained at the nutrition centre, age and weights were accurately plotted and the dots invariably joined. During our visits to the households, fifty percent of the mothers produced the card. Additional 40 percent claimed that the cards were kept locked by their husbands or family elders.

An important issue related to use of growth cards is the extent to which these are used for education of mothers. Although nutrition and health education is also given directly to the mother and the community, the cards seem to be used as an educational tool in this project. This impression is based on two observations. Firstly, most mothers interviewed can interpret the trends of growth lines and early change in the normal upward trend. Secondly, some of them actually used the card to explain the effect of diarrhoea on growth when asked a leading question. It is however, difficult to ascertain if the use of the growth card as an educational tool is maximally effective. We are concerned that many mothers though claiming to possess the card, do not produce it, claiming that it is locked away by the husband or father-in-law. Presumably, often even the workers may not be using the card kept with the mother.

Observations and impressions of the study team

(a) CNC

All the pedestrians in the village can locate the CNC. The premises are compact, clean and neat. The weighing scales are prominently suspended from the ceiling, the walls are full of posters focussing the importance of weighing and its utility for the child.

On the day of the visit children were being weighed by the community nutrition workers alongwith members of the WWG in an efficient manner and without confusion or chaos. Growth cards are arranged neatly. Cards of individual children can be identified in less than a minute. Supplementary feeding is given to children in a clean, orderly manner. Most children are with their mothers and some with mother-substitutes from the family. The role of local mothers belonging to WWG is visible and impressive.

(b) CNW

The Community Nutrition Workers are widely known in their communities; most mothers and children can identify them. They are proud of the special recognition received in the village for their services. They are highly motivated, articulate and confident and recite their responsibilities and activities precisely. The degree of professionalism is unusual and impressive. Their rapport with mothers, school children, teachers and the multipurpose health workers is excellent.

There is stress on linking illness with growth faltering using the growth cards.

There is however, a lack of emphasis in the education given by the workers on the bulk and amount of food appropriate for different ages and frequency of feeding . They also seem unaware of the need for increasing energy density in the local infant diets. Indeed, all the field staff share the perception of the mothers that oils or fatty foods should be witheld during an illness like diarrhoea.

CNWs possess remarkable degree of proficiency in skills of growth monitoring. They are at ease while handling children and using the weighing scales. Their recording of weight and plotting of cards is uniformly of high quality. Growth trend and not the grade of malnutrition is given greater emphasis.

III. SUPERVISION

The first level supervision in TINP is provided by the CNS. There is a vertical chain of staff playing a well defined supervisory role including CNI, TPNO and DPNO at block, taluk and district level, respectively. There is one CNS for 10 CNWs.

(a) The job description is explicit, clear and available in writing.

(b) A good check-list of supervision during each visit to CNC is available.

(c) The supervisory visit to CNC has two clear goals: supervision followed by inservice training.

(d) **Supervision is based on activities at the CNC as well as in households.** The supervisors visit households of problem children. This allows them the opportunity to assess the quality of nutrition and health education by the workers and correct deficiencies through a problem-solving approach.

(e) Refreshingly, supervisors concentrate on technical matters like accuracy in weighing, plotting, interpreting; while considerable attention does go to issues related to supplementary feeding.

IV. IMPRESSION ON ROLE AND PARTICIPATION OF MOTHERS

The prime indication of a successful growth monitoring programme is the extent of mothers' participation. The observation team therefore spent more than half of the time in the field in an attempt to absorb what the mothers had to say.

The salient objective findings in 65 mothers are shown in Table

Table 2: Assessment of mothers' KAP and skills

Variables	Percentage of mothers responding in affirmative (n=65)
a) GM	
- Growth monitoring is useful for my child	97
- Understand its purpose correctly	85
- Approve of monthly frequency of weighing	89
- Eligible children in household are actually weighed monthly.	69
b) Growth cards	
- Produce growth cards during home visit	51
- Card locked up by husband/family elder	40
- Lost the card	9
c) Causes of deviant growth	
- Lack of dietary intake	82
- Frequent or recurrent illness	95
- Failure of lactation	85
d) Feeding of children	
- Correct duration of breast feeding	100
- Correct age for additional solid foods(6-12 months)	89
- Appropriate foods from 7 months to 2 years	
. Excellent	15
. V. Good	51
. Good	22
. Fair	6
. Poor	6
e) Diarrhoea management	
- Aware of ORT	100
- Knows correct preparation of Sugar & salt solution	80
- Diet	
Same or more than that preceding illness.	69
Decrease intake.	25
Increase intake for 7 days after illness	15
Superstition about useful foods.	9
f) Correct interpretation of growth card	
- Normal growth	95
- Growth faltering	85
- Malnutrition grade III	89
g) Skills	
- Weigh a child correctly	20
- Plot weight in growth chart	15

It is clear that the strong awareness and motivational drive in the community has succeeded in breaking the resistance, common in the beginning of the project to bring their children for weighing. This is a considerable achievement. The mothers seem to know and approve of the CNW and the MPHW.

Most understand the purpose and goals of the programme. Periodic weighing is related both to supplementary feedings as well as to finding out how well the child is growing. The common causes of growth failure are mentioned as illness such as fever, diarrhoea, lack of breast feeding, poor diet and inability by the mother to look after the child during harvesting. The need to start weaning food after 6 months is known to all. The knowledge about appropriate food is less impressive. Overemphasis and a higher ranking is given by mothers to foods such as leafy vegetables and tomato soup even though cereals, pulses are enumerated by most. **Care needs to be exercised in educating the mother about right priority for foods.**

The superstition about reducing foods in diarrhoea still persists in about 25 percent of mothers. Most of these have been educated about sustaining feeding during fever, diarrhoea and other illnesses by the health workers. Almost all mothers admit that they will not add oil to rice or 'dals' during diarrhoea and this perception is also shared by most workers.

Most mothers find the recipe of supplementary food too cumbersome and time-consuming and do not use it at home.

Only WWG members can weigh and chart it in growth cards accurately. However, the interpretation of growth lines by mothers is accurate and impressive. They can identify growth faltering, malnutrition

and a relapse with considerable skill and consistency. The growth card seems to serve one important purpose: it clearly explains the relationship between illness and nutrition to them. The mothers spontaneously use the card while explaining reasons for deviant growth. This suggests an effective use of the growth card by the workers.

Most mothers are aware of the messages of different posters, flip charts, and have seen films on growth monitoring. They know about the monthly campaigns, WWGs and CWGs. The effectiveness of the communication is evident. The programme seems to have penetrated deep in the community reaching almost all mothers.

V. WHAT IS GROWTH MONITORING BEING USED FOR?

There is a strong awareness in the field staff that the ultimate and all important objective is to educate the mother and achieve appropriate changes in her behaviour. The communication strategy employed also stresses on the process of monitoring growth than on supplementary feeding. The numerous posters at the centre focus on healthy children being weighed and few show children eating the supplementary feed. The emphasis in interpreting the growth cards is on early detection of growth faltering rather than detection of malnutrition. There is adequate emphasis on imparting nutritional education to mothers of children with loss of weight or poor weight gain.

The response to growth faltering has a major flaw in that the referral to the health worker or higher level health functionaries is done only if the child fails to graduate after three months of feeding.

VI. LINKAGE WITH HEALTH SERVICES

The health component operates through the Multipurpose Health Workers (MPHWs), one for 5,000 population in accordance with the nation-wide scheme. A Health Sub Centre (HSC) is established for every 5,000 population which is managed by the MPHW.

MPHW and HSC

We visited two sub centres of our own choice. The places are neat and clean. Tansi weighing scale in excellent condition is suspended from the ceiling. They also have a bar-type cradle scale. The few children visiting the centre at the time of our visit were being weighed. The worker looked calm and confident. She was explaining the findings to a mother on the growth chart when we entered the room. We observed her handling and weighing the children. She corrects the zero-error in the scale and takes the weight accurately. The plotting of weight is correct and the dots are joined.

All the workers are knowledgeable about causes of deviant growth, infant feeding and diarrhoea management. The skills on interpretation of growth lines are excellent. The motivation is high, a feature common to all other workers in the project.

Back up support from Primary Health Centre & Medical Officers

We were informed that regular weighing of children visiting the centre is not done even though there are 2 ANMs on the staff. Indeed, the doctors do not feel any need for it. About thirty births take place at the primary health centre every month and the birth weights are recorded but no special attention or care is taken of those with low birth

VIII. COMMUNICATION SUPPORT

A unique feature of TINP is an effective communication component. It has succeeded in making growth of children, an important issue among mothers, opinion builders, administrators, lay public and the health workers. The innovative feature of the communication approach are:

(a) Person to person contact, reinforced with monthly mass campaigns on specific issues with regular pre-and-post campaign evaluations.

b) Use of traditional methods such as folk theatre (Vallipattu) and jingles based on folk songs composed by workers and mothers.

(c) Use all possible communication aids and points of contact.

(d) Sustain work motivation and intersectoral coordination through regular meetings and workshops.

(e) Prizes for slogan raising competition, best nutrition workers, best essay in growth and nutrition.

IX. TRAINING

1. Training of health workers is a major factor determining the extent to which programme objectives can be achieved.

2. The CNWs are trained within the project and the supervisors and instructors at the Gandhigarh Rural Training Institute, Madurai (Annexure IV).

3. The faculty at the training institute in consultation with project headquarter staff designed the curriculum and methodology of training for supervisiors and instructors. The faculty is well represented by instructors from essential disciplines like nutrition, child development, child health, education and communication, and public health and sociology.

4. The duration of training for all levels is about two months with major stress on reinforcement through in service training.

5. The basic core curriculum for nutrition workers and supervisors is similar but with few additions related to their specific job function in the project.

6. The instructors go through the entire process of developing and implementing a complete programme for training a batch of CNWs. The exercises include definition of general objectives and specific learning objectives, development of audiovisual and other teaching aids, evolving problem solving exercises, education and communication and pre-and-post training evaluation systems.

7. All levels of workers do practical, field training for about 30-40 percent of the training periods, more for CNWs and CN supervisors.

8. There is a pre-training, mid-training and post-training evaluation. Significant number of children are weighed, findings plotted on growth cards and explained to mothers. CNWs are involved in health and nutritional education exercises with mothers.

9. Specific learning objectives for training are developed.

Training Manual

1. A comprehensive, very well illustrated manual in Tamil (vernacular) is given to all workers.

2. It is common to all workers; according to project leaders, workers at all levels and in interrelated services know each other's job responsibilities and activities. This ensures uniformity in perception, quality of work and coordination at peripheral and higher levels as well as between different sectors.

3. The manual was first developed during the first phase of the project by the coordination office with the help of community nutrition instructors.

4. A workshop was organised to identify lacunae and suggest modifications which were incorporated into the manual in 1983 and in the last revised edition of 1984.

X. MONITORING AND EVALUATION

Input delivery, coverage of target population & input utilization.

The extent of delivery of key inputs and of the contact with target population are recorded and analysed every month at the field level. The findings from six districts show that:

(a) A higher proportion (82-96 percent) of children of the target group (7-36 months) are being weighed monthly in December 1985 as compared to the earlier years.

(b) Eighty percent of children in target group receive supplementary feeding at one time or the other.

(c) There is a decline in the proportion of children needing SF from 30-42 percent in the beginning of the project to 25-29 percent in December, 1985 in different districts.

Mid-term evaluation (1984): key findings in study and control blocks

(a) Among children 7-60 months old, the percentage of children in normal and first grade increased by 9.7 percent points in project blocks while declining by 4.2 percent points in the control blocks. This result was obtained in spite of the fact that all children of age 24-60 months were given a noon-meal both in the project and the control block (Annexure V)

(b) The net decline in severe malnutrition achieved in the 13-36 months age group is 40 percent(Annexure VI). This is based on an actual decline of 23 percent in the project area and an increase of 17 percent in the control area.

Key lessons from monitoring and evaluation data

(a) Children under 3 years of age can be reached if a project is specially designed for them.

(b) Mothers do bring children for weighing even if they are not given a supplement. The initial resistance to weighing was very effectively overcome with community education.

(c) Community nutrition workers with some education can be trained to correctly weigh children and interpret the growth lines.

(d) TINP communication component puts heavy emphasis on the importance of weighing children. Children who do not come on their own to the centre are weighed at home. The WWG are a highly effective instrument for motivating defaulters to bring their children to the centre for weighing.

(e) An issue of major concern is the high relapse rate. This is often linked to illnesses like fever or diarrhoea and to mothers being away from home for work particularly during the harvesting season.

(f) The ill effects of infection on growth can be minimized or reversed by prompt health attention. The system of referral both for illness as well as in response to growth faltering was found ineffective.

XI. AREAS IN GROWTH MONITORING THAT NEED STRENGTHENING

1. Improved coverage between 0-6 months with effective response to low birth weight and growth faltering.

2. Response to growth faltering should include prompt health check and active search for infection.

3. Strengthen GM activities at PHC

4. Babies identified as low birth weight at PHC must be referred to field workers for home follow up.

5. Nutrition education messages must convey concept of bulk, amount and frequency appropriate for the individual child.

6. Supplementary feeds must be such that can be made by mothers at home.

XII. FACTORS ASSOCIATED WITH SUCCESSFUL GROWTH MONITORING IN TINP

1. Strong motivation among leaders.

2. GM was added in a vertical manner to an existing primary health care programme.

3. GM used as a promotion tool with emphasis on mothers education, judiciously supported by selective supplementation.

4. Design oriented to target group (0-36 months).

5. Home based GM focussing on individual child.

6. Strong community awareness and participation. Mothers actively involved, WWG, CWG, teachers etc.

7. Community nutrition worker, belongs to village, female, educated, high motivation and skills.

8. Training:

Short initial training backed up by purposeful, action oriented, repeated, on the job, inservice training; stress on developing practical skills through field training at lower levels; small batches (20-30); learning objectives well defined; training manual, single for all levels, comprehensive, well illustrated.

9. Education and communication:

Targeted to all in the community; uses all available channels and contact points; messages within social/cultural context; messages designed according to prevailing KAP with frequent impact evaluation.

10. Well organised logistics and supplies.

XIII DOCUMENTS CONSULTED

1. Murthy, N. - Growth monitoring in Tamil Nadu Integrated Nutrition Project. In: Proceedings of workshop on growth monitoring as a Primary Health Care activity. Yogajakarta, Indonesia, August 1984.

2. Tamil Nadu Integrated Nutrition Project:

Mid-term Evaluation Report, 1984. Department of Evaluation and Applied Research, Tamil Nadu.

ANNEXURE I

JOB DESCRIPTION OF COMMUNITY NUTRITION WORKER (CNW)

1. Surveys the population in her area; records births and deaths.

2. Monitors growth of eligible children.

3. Identifies children for supplementary feeding; prepares and administers supplementary feeds.

4. Referrals.

5. Nutrition and health education at the CNC and households. Also, at WWG, CWG and school meetings.

6. Organizes community participation activities through WWG, CWG and schools.

7. Delivers other primary health care activities: diarrhoea management, vitamin A administration, deworming; and assists MPHW in giving immunization.

8. Upkeep of the CNC, maintenance of records and registers, preparation of monthly reports.

ANNEXURE II

JOB DESCRIPTION OF COMMUNITY NUTRITION SUPERVISOR (CNS)

1. Visits to CNC

She visits each CNC thrice a month.

- Assesses upkeep of the CNCs.
- Supervises growth monitoring, checks weighing scale, corrects zero error.
- Observes spot feeding, whether eaten at centre or taken home.
- Checks criteria for supplementary feeding.
- Checks register entries.
- Verifies age of children.
- Checks referrals.
- Visits 30 houses under each CNC.
- Checks stocks.

2. Supervisory and coordination meetings

- Conducts meeting of CNWs under her charge twice a month for beneficiary entry verification, review of work, problem solving and data collection.
- Attends WWG meeting (four times a month); gives family planning advice, nutrition education and distributes papaya seeds.
- Attends CWG meeting twice a month.
- Attends coordination meetings at Taluk, Block and PHC level.

ANNEXURE III

JOB DESCRIPTION OF COMMUNITY NUTRITION INSTRUCTRESS (CNI)

1. Training of CNWs:

   - Initial training at the time of selection.
   - In-service training.

2. Supervision of CNWs and CNSs:

   - Visits CNCs and households.
   - Attends review meetings at block level once a fortnight.

3. Health education:

   - Attends at least four demonstrations at CNCs.
   - Participates in some of the WWG and CWG meetings.

4. Coordination:

   - Serves as a link between CNWs and CNSs on one hand and TPNO and DPNO on the other.

5. Administration:

   - Administers project at block level.
   - Indents supplies.

ANNEXURE IV

Characteristics of initial training of nutrition and health personnel at TINP

Features	CNW	CNS	CNI	MPHW
Essential qualifications	8th class	Graduate	B.Sc.Home Science	SSLC
Place	Block headquarter & Model CNC	Madurai	Madurai	
Institution	Within the project.	GIRH*	GIRH*	
Duration	2 months	2 months	2 months	one and a half years
Size of group	Initially 66 subsequently 20-30**	10-15	12	
Course designer	PC, CNI, faculty of GIRH training institute	Training institute faculty	Training institute faculty	Training institute faculty, department of health & family welfare.
Trainers	CNI, CNS, TPNO, MO, teacher educator, community educator, health inspector, health supervisor.	Nutrition, communications, sanitation, nursing & sociology experts.	Nutrition, communications, sanitation, sociology and nursing experts.	Medical, sanitory, public health officers, nursing teachers

Contd....

Features	CNW	CNS	CNI	MPHW
Learning objectives	Yes	Yes	Yes	Yes
Trainer: trainee ratio	1:66**	1:20	1:20	1.12
Class room Field training ratio	2:1	2:1	2:1	2:1
No. of children weighed during training	10	10-15	Several	Several
No. of growth cards filled	100-200	10-20	10-20	10-20
Problem-solving exercises on growth monitoring	Yes	Yes	Yes	No
Pre-and post-training evaluation	Yes	Yes	Yes	Yes
Training manual available and given to trainees	Yes	Yes	Yes	Yes
Use of audiovisual methods	Yes	Yes	Yes	Yes
Medium of instruction	Tamil	Tamil English	Tamil English	Tamil

*The Gandhigram Institute of Rural Health & Family Welfare Trust, Madurai District, Tamil Nadu.

**After Phase I, 1:20

ANNEXURE V

Trend in the proportion (in percentages) of normal and grade I nutritional status

Age Group	Pilot Block			Control Block		
	Baseline survey Oct.1980	Mid term evaluation March 1984	Trend: Decline (-) Increase(+)	Baseline survey Oct.1980	Mid term evaluation March 1984	Trend: Decline (-) Increase(+)
7-12 months	77.8	76.6	-1.2	58.1	71.0	+12.9
13-36 months	41.7	48.4	+6.7	57.1	48.3	-8.8
37-60 months	46.8	59.9	+13.1	62.1	56.0	-6.1
7-60 months	46.6	56.3	+9.7	59.3	55.1	-4.2

ANNEXURE VI

Trend in the proportion (in percentages) of grade III & IV malnutrition

Age Group	Pilot Block			Control Block		
	Baseline survey Oct.1980	Mid term evaluation March 1984	Trend: Decline (-) Increase(+)	Baseline survey Oct.1980	Mid term evaluation March 1984	Trend: Decline (-) Increase(+)
7-12 months	8.3	4.0	-4.3	21.6	6.6	-15.0
13-36 months	20.4	15.7	-4.7	15.1	17.8	+2.7
37-60 months	15.6	6.8	-8.8	12.5	6.7	-5.8
7-60 months	17.3	11.1	-6.2	14.8	11.6	-3.2

PROJECT THREE

CHILD IN NEED INSTITUTE

(VILLAGE DAULATPUR, 24-PARGANAS, WEST BENGAL)

Contents

CINI - Child in Need Institute

I. PROJECT OVERVIEW

CINI is a voluntary organization involved in the delivery of health services at the community level and its integration with an all round social and economic development of the people. CINI was founded in February 1975, and maternal and child health clinics were set up in urban slums of Calcutta. To optimise the benefits of these services, inputs for social and economic development of the area were added.

The project area has rural and urban components. The programme covers a rural population of 74,000 in 40 villages of two community development blocks (Bishnupur I and II) in District 24 Parganas, West Bengal. The five urban slums receive services both from CINI and ICDS programme. For the implementation of various CINI activities, the project area has been divided into four zones, each with 10 villages.

The programme components at present are:

1. HEALTH AND NUTRITION SERVICES

   (a) Community based

   - rural
   - urban slum

   (b) Institutional

2. TRAINING of health and development workers and members of the community in primary health care at CHETNA - the training centre.

3. SOCIAL AND ECONOMIC DEVELOPMENT:

- Income generating activities: farm and agro based
- Child sponsorship and family helper project.
- Training and extension programme for national project on smokeless 'chullah'.

4. RESEARCH on health and nutrition related subjects.

OVERALL PROGRAMME OBJECTIVES AND GOALS

(a) Develop and implement a community based low cost comprehensive health care programme for mothers and children.

(b) Organize women into effective groups (Mahila Mandals) that will initiate group action programmes in mother and child health.

(c) Raise mother's income and also of the family by family level activities.

(d) Train health and development workers from the government and non-government sectors.

(e) Conduct monitoring and evaluation of CINI's on going programmes as well as operational research in primary health care activities.

II. HEALTH & NUTRITION SERVICES

These consist of a package of primary health services which are used as an entry point for other non health inputs. The health and nutrition activities of CINI are presently being supported by the Ministry of Social Welfare, Government of India under the Project Voluntary Organizations in Health (PVOH). The organizational structure and job description of the key staff is provided in annexures II and III.

The services provided are:

(a) growth monitoring at the village level clinics;

(b) home based oral rehydration therapy for diarrhoea cases;

(c) immunization services for under 5 children and pregnant mothers;

(d) prophylaxis programme for vitamin A deficiency;

(e) community based simple health care for under six, pregnant and lactating mothers;

(f) health and nutrition education; and

(g) rehabilitation of severely malnourished children.

These services are provided through a number of out-patient clinics (Table 1). There are 10 clinics for the 74,000 rural population. Within each clinic there are separate points (stations) for registration, weighing and growth card plotting, ORT demonstration, health and nutrition education, demonstration of supplementary feed preparation, health check up and immunization, in that order. There is a separate antenatal station.

Growth card is used as an entry ticket for children 0-6 years. These are retained by the mothers. A new growth card or replacement of the old one costs the patient 50 paise. A service charge of Rs.1.00 is collected at each visit.

Table 1: Health and nutrition clinics at CINI

	Static clinics	Mobile clinics
Population covered	Whole CINI area	2-3 adjoining villages
Number	3	7
Frequency	Weekly	Fortnightly
Organized by	Health workers	Mahila Mandals or Youth clubs
Weighing	Health workers	Mahila Mandal or Youth club members
Health component	Health workers	Health workers
Doctor	Present	Absent

III. GROWTH MONITORING

Periodic measurement of weight is done at all the clinics. During which the children are weighed and issued growth cards and are encouraged to visit the clinics. At the clinics, after registration, all the children go to the weighing station. The worker or the MM mother takes the weight on a Salter spring balance with 100 gm. divisions and it is plotted on the growth card in front of the mother. The mother is told the weight and also how it relates to the previous measurements.

Health and nutrition advice is given to the mother at the next station by the health worker/MM mother according to the weight record and its trend. It is estimated that in a village 40-50 percent children aged 0-6 years are weighed every month and a further 30 percent are weighed at 2-3 monthly intervals. Approximately 35-40 per cent children in 0-3 years are covered for monthly weighing.

Table - 2 : Growth Monitoring at CINI

	0-6 Years
Centre/home based	Centre
Indicators	Weight for age
Who weighs	
Static clinics	Health workers
Mobile clinics	MM mother/Youth club member
Periodicity	Monthly
Extent of coverage (monthly)	
Static clinics	30-45%*
Mobile clinics	50-70%*
Time when weighing done	Every visit to clinic
Who records in card	Health worker or MM mothers
Who keeps card	Mother
Scales used	Salter

* The coverage is 15-30 percent, and 35-40 percent for 0-6 month and 0-3 year age groups respectively.

The potential objectives of growth monitoring that are being achieved at CINI include:

(a) Detection of early weight loss and nutrition education.

(b) Detection of established malnutrition for rehabilitation.

(c) It is used as an entry point for other services related to health and overall socio-economic development.

(d) It is also used for promoting active participation of women in health care and developmental activities and enhancing their status in the community.

(e) Research purposes.

Design, maintenance and use of growth cards

Design:

The growth card used at CINI is essentially a Voluntary Health Association of India (VHAI) "Road to Health" card with some local modifications. The card is printed on a thick art paper mostly in Bengali with some english words and numericals. The card costs 50 paise to the mothers.

There are columns for immunization, indications for special care, morbidity and the bio-data of the child. Instruction for weaning, infant feeding, breast feeding, sugar salt solution and supplementary food preparation are printed on the chart. Growth chart is suitable for use upto 6 years. The smallest division for weight is of 500 gms.

Operation:

The plotting of weight is done most often by health workers and also by some MM mothers. Weight charting is done in front of the mothers. They are told about the present weight and its relationship with the last recording. The doctors ask for the growth card when the patient is referred to them for any ailment or nutritional problems. Most of the mothers, interviewed in various clinics possessed the card given to them on their first visit.

Use of growth cards:

Most workers do not join the dots to form a curve. Poor weight gain is not identified. In case of weight loss, mothers are explained on the basis of the dot positions. The card is used for explaining the messages regarding feeding.

Weighing scale:

Salter "weigh bird" spring balances with 100 gm divisions are used in all the clinics. These are made in India and were acquired 5-6 years ago. In some the numericals on the dial are not easily visible. The pants are torn in some clinics.

Most balances have a zero error of 500 to 700 gms but there is no external knob to correct it. The health workers and mahila mandal mothers know about the zero error and make the necessary adjustments while measuring weight. The clothes are not removed during weighing. All the scales at the clinics we visited, were functional but when repairs are needed, these have to be sent to the city.

Action response to faltered growth

In case of weight loss, the health workers and mahila mandal mothers inquire about illnesses like diarrhoea, fever, worm infestation etc. The mother is advised to increase the dietary intake and is encouraged to buy supplementary food provided at a subsidized rate. There is no followup at the domiciliary level but they are advised to attend the clinic fortnightly. However, no special note is taken of inadequate or no weight gain. Indeed, since growth lines are not drawn on the card, it is not possible to detect early growth faltering.

In the children with grade III malnutrition, attempt is made to identify illness and diet related causes. These children are referred to the doctor if (i) there is acute fulminant or chronic infection; (ii) the child is severely anorexic or (iii) has edema. The mother is given an intense individual education on health and nutrition; child is followed up fortnightly in the clinic and mahila mandal mother visits the home at least once a week to record the progress till he starts gaining weight. The patients are encouraged to buy the supplementary food. The follow up of severely malnourished children is quite good.

A select group of severely malnourished children are referred by the doctor to the nutrition rehabilitation centre when: (a) the family is very poor; (b) mother has lactational failure or (c) if the general condition is bad, including presence of edema.

IV. OBSERVATIONS OF THE STUDY TEAM

Clinics

The static clinics are attended by over 300 and the village

clinics by over 50 mothers and children every day. They are neat and tidy. **The weighing balance hanging prominently from the ceiling, right at the entry point indicates the focus on growth.** The waiting time at the clinic is very well utilized for education on diarrhoea management to groups of 4-5 mothers. **It is the worker who is in command and supervises the entire growth monitoring activity.** She seeks advice from the doctor when required, who himself seldom sees a patient but is more of a supervisor. MM members manage the weighing and education with enthusiasm and authority at the village level clinics. Most of the furniture in use at the village clinics belongs to the neighbours which is an indication of community participation and support.

Health workers

The workers are highly motivated and articulate. They are skilled in weighing and make adjustments for the zero error while recording. They mark the age and dot position accurately on the card but often do not join the points to make a line. Because the points are not joined, inadequate or no weight gain is not noted. This is a serious flaw as the opportunity to respond to early growth faltering is lost. The workers are able to judge the weight loss by the relative position of dots and in such situations, the response is adequate. They investigate the cause of weight loss in a child such as inadequate diet and illness like fever, diarrhoea, measles, pneumonia and tuberculosis.

The workers are knowledgeable about feeding and illness management. However, they do not provide a clear and practical advice on how much and how often to feed a child. There is a need

to improve the contents of diet and nutrition messages. Their knowledge about ORT and immunization is good.

The health workers enjoy a very good rapport with the MM mothers and are seen sharing snacks after the clinic.

Impressions on mothers' role and participation

In CINI, substantial effort is being made to actively involve the mothers in growth monitoring and other health activities.

The observation team therefore, spent over half of the time during the visit, conversing with village mothers at the clinics and in their homes. The salient observations are provided in Table-3.

Every mother interviewed by us, without exception, considers growth monitoring to be a useful exercise for the children and understands its purposes well. They are sufficiently motivated to bring their children for regular weighing. This is consistent with the visible emphasis given to growth and its monitoring in the total package of services. Effective use of education and communication services has succeeded, to a large extent in creating a mass awareness about the importance of growth for a child. All other activities in the project are linked to growth and growth monitoring. Two third of the mothers interviewed had actually been getting their children weighed at monthly intervals. More than half the mothers visited at home produced the growth card. Majority of mothers could interpret normal slope of growth curve and malnutrition. Some could identify early growth faltering and consider growth faltering to be a problem deserving a response.

Most mothers are aware of the causes for deviant growth and give dietary inadequacy and frequent illness like fever, diarrhoea, measles and tuberculosis as the causative factors.

The knowledge about feeding practices is good. Over three fourth of them could list appropriate foods for infants. The understanding of the amount and frequency of feeding is not as clear. This is because the workers themselves do not emphasise this aspect while talking to the mothers.

Almost 85 percent of them do not decrease food during illness and interestingly 10 percent responded that the food intake should actually be increased after recovery. Most mothers are aware of ORT and know how to prepare it.

Fifteen percent mothers can weigh the children correctly. These are mostly MM members. A few of these can also plot the weight on growth cards.

The awareness and perception about growth monitoring is clearly strong among mothers in this programme. An index of their motivation is that 50-70 per cent of them bring their children to the clinics for regular weighing despite the time and effort it requires. Because, the mothers keep the card, the understanding of early growth faltering as the opportune time to act is common. The messages about feeding during illness seemed to be well absorbed.

Table 3 : Assessment of mothers' KAP and skills

Variables	Percentage of mothers responding in affirmative (n=132)
(a) Growth monitoring	
- Growth monitoring is useful for my child.	100
- Understands purpose of GM	84
- Approves of monthly frequency of weighing	73
- Eligible children in household are actually weighed monthly	66
(b) Growth card	
- Produces growth card during home visit/clinic	58/98
- Card locked up by husband/family elder	-
- Lost the card	7
(c) Causes of deviant growth	
- Lack of dietary intake	57
- Frequent or recurrent illness	80
- Don't know	15
(d) Feeding of children	
- Correct duration of breast feeding	100
- Correct age for additional solid foods(6-12 months)	91
- Appropriate foods from 7 months to 2 years:	
- Very Good	68
- Good	11
- Fair	11
- Poor	0
(e) Diarrhoea management	
- Aware of ORT	89
- Knows correct preparation of sugar-salt solution	75
- Diet	
Same or more than that in preceding illness	84
Decrease intake	16
Increased intake for 7 days after illness	9
Superstition about useful foods	0
(f) Correct interpretation of growth card	
- Normal growth	70
- Growth faltering	45
- Malnutrition grade III	66
(g) Skills	
- Weigh a child	15*
- Plot a growth card	4

* Majority of these are Mahila Mandal mothers.

Training programme

CHETNA is a separate wing at CINI for training of all levels of health and development workers. The key features of training are shown in the table below:

Table - 4 : Key features of training

Components	Health Workers	Mahila Mandal Mothers
Duration	3 months	6 days (36 hours) + 3 months
Contents	- Concept of basic human structure & function - Maternal care - Child care - Collection of statistics & maintainence of records	- Growth monitoring - ORT - Breast feeding - Immunization - Health & nutrition education
Batch size:		
Classroom	10-12	20
Field	5-6	6-7
Classroom: Field	2:1 month	1 WK:3 months
Specific learning objectives	Yes	Yes
Training Manual	No	Yes
Problem solving exercises	Yes	Yes
Children weighed	In-service	4-6
Growth charts filled	In-service	4-6
Post training evaluation	No	Yes
In-service training	Yes	Yes
Educational background (Schooling)	8-12 years	5-8 years (not essential)

The training programmes and manuals are designed by pediatricians with community health background, nutritionist and serving health workers. The training is imparted by the same set of people as well as other medical officers. ICDS functionaries and workers from NGO's are also trained here.

Health workers: Most of them are working with CINI for over 5 years now. All the mahila mandal and health coordinators are senior health workers who have now assumed supervisory role.

Growth monitoring was not given adequate emphasis during initial training of the health workers. In line with the project objectives, growth monitoring and ORT education were introduced as a part of the in-service continuing education. Weekly institutional meetings form the focal point of such interactions. Health coordinators and zonal coordinators actively participate in the in-service training programme taking into account the deficiencies of the health workers in their area. Enough emphasis is given to the field training and problem solving exercises.

The two major lacunae are lack of a training manual and post-training evaluation.

Mahila Mandal mothers: The theme of the training is "Improved Child Survival". Three to four mothers are selected from each mahila mandal. Mothers with 5 to 8 years of schooling are preferred although it is not essential.

The unique feature of the training is that the initial one week classroom course is supported by three months of apprenticeship during which through practical work under supervision, she develops into an effective worker. Learning objectives have been well laid out. Almost 25 percent time is devoted to instructions in growth monitoring.

She visits nearly 120 to 150 houses in her area and weighs several children but the stress on plotting needs to be increased. She also assists with the mobile clinic. Weaknesses are rectified during this period of apprenticeship. A final evaluation is conducted at 6 months to declare her suitablity for independent working by senior instructors and area health workers.. The MM mothers are not paid any remuneration for their contribution.

Trained MM mothers are evaluated at 3 monthly interval by coordinators.

Medical Officers: There is no formal training course for the medical graduates at CINI. However an initial period of 2 to 3 months is used for "de-schooling" at weekly institutional meetings. Subsequently the medical officers attend classes and demonstrations along with health workers for a period of 2-3 weeks.

All medical officers are sufficiently motivated and convinced about the usefulness of growth monitoring.

Community participation

The major innovation in growth monitoring at CINI is the vigorous and active participation of the community. Their approach to achieve this by organising Mahila Mandals at village levels is unique. Youth clubs, school teachers, panchayat leaders, traditional birth attendants and village practitioners, have also been educated in growth monitoring and nutrition education, for improved child survival.

Mahila Mandals: The women in CINI project are organised into village level "Mahila Mandals" (women's club). There are 17 MMs in the rural area covered under PVOH programme and 5 in the urban slum ICDS Anganwadis. Each MM has 15-20 members. These members are identified with the help of local youth clubs and panchayat leaders. Essentially these are women with a flare for social work. About 50 percent of the members have some education. Majority of the MMs formed so far have been registered with the Registrar of Societies making these accountable bodies.

The MM members weigh the children, educate the mothers on nutrition and health and motivate them to utilize programme services.

They weigh children at the village level in mobile clinics and the urban slums. The skills of MM mothers in weighing are good. They cannot plot because they are not trained to do so. However all of them can interpret growth lines very well.

Each MM mother covers 4-5 neighbouring households. Their contribution to promoting growth and nutrition awareness among members of the community is achieved through household visits particularly for at risk, malnourished children and by organizing periodic workshops for women.

The Youth Clubs are primarily involved in the education of their own families and other community members on nutrition and health issues. They occasionally participate in weighing activity at the mobile clinics and help during campaigns.

Supervision

The ratio of one supervisor to four health workers is appropriate. The supervisors help with growth monitoring work, actually participating side by side with the worker. This allows an excellent opportunity for supervisors to detect and correct deficiencies. The supervision in this situation is more intutive rather than through an organised and objectivised manner. The supervision of MM members is primarily the responsibility of the health worker. They check the ability of the MM members in weighing correctly, giving education and explaining findings on growth card to mothers.

The stress of supervision is not on administrative work but on actual skills and the tasks involved.

Education and communication support

The programme has a separate communication division. A significant feature is the continued use of a professional advertising agency for supporting communication activities. They have succeeded in creating an awareness about child growth and health promotion among the community, mothers, teachers, village elders and lay public. Key activities and innovations are as follows:

* Communication aids are developed with the active involvement of the medical officers, health workers, nutritionists and other field staff. These are used within the project population and sold to outside agencies to generate resources.

* The methods used are relevant to the local social and cultural milieu. These include biscope (peep shows), puppet shows, T-shirts, cassettes, posters and flip charts carrying messages on growth and nutrition.

* Mothers are actively involved in developing nutrition and health messages through communication workshops.

* Messages on nutrition and health are field tested periodically. The field staff contributes actively in developing these.

* MM mothers and health workers are trained in the use of communication and education methods.

Communication support is an important feature of this project.

V. SUMMARY: STRENGTHS AND CONSTRAINTS

1. The project delivers a comprehensive package of primary health services, in which Growth Monitoring is a pivotal activity.

2. The nodal points of GM are a series of 10 clinics catering to a population of 74,000. There is no home based growth monitoring activity.

3. The coverage for monthly weighing in the 0 to 6 years age group is about 50 percent. Additional 30 percent are weighed at 2-3 monthly intervals.

4. Nutrition education and periodic supervision is provided to children detected to have loss of weight and severe malnutrition.

5. Intense education targeted at the community motivates the mothers to bring their children to the clinic for growth monitoring. In order to increase the monthly coverage and the impact of GM, it is necessary to extend the activity to domiciliary level.

6. Skills in GM to health workers and Mahila Mandal members are mainly provided as in-service training.

7. The workers' skill in growth monitoring is good. Single major lacunae is that trend lines are not made on the growth card.

8. Women in the community contribute significantly towards successful growth monitoring activity. They serve as motivators, educators, and growth monitoring workers for their neighbours. A similar contribution is made by youth club members and school teachers.

9. Growth monitoring receives appropriate communication support with the assistance of a professional media agency.

10. An innovative experiment has been started in an urban slum ICDS block, where the local mothers are being used as growth monitoring workers for neighbouring 4-5 households.

Annexure 1

CHILD IN NEED INSTITUTE (CINI)
(Main Activities)

Health & Nutrition	Training At CHETNA-CINI	Income Generation Agro and Farm based	Child Sponsorship & Family Helper Programme	National Training & Extension Programme on Smokeless Chullah	CINI Supported Extension Projects
1. Static clinics 2. Mobile clinics 3. Mini clinic 4. Health campaigns	1. ICDS Anganwadi functionaries -supervisors 2. Health workers for CINI 3. Members of community in primary health care and income generating activities: * Mahila Mandal Mothers * Youth Club Members * School Teachers * Practitioners * TBAs * Panchayat Leaders	1. Agriculture 2. Poultry 3. Fishery 4. Dairy	Mainly from foreign donations Assistance - Educational Supports - Clothing - Health check up - Income generating activities - Help in emergency needs of family		- Moyena - Halencha - Sunderbans

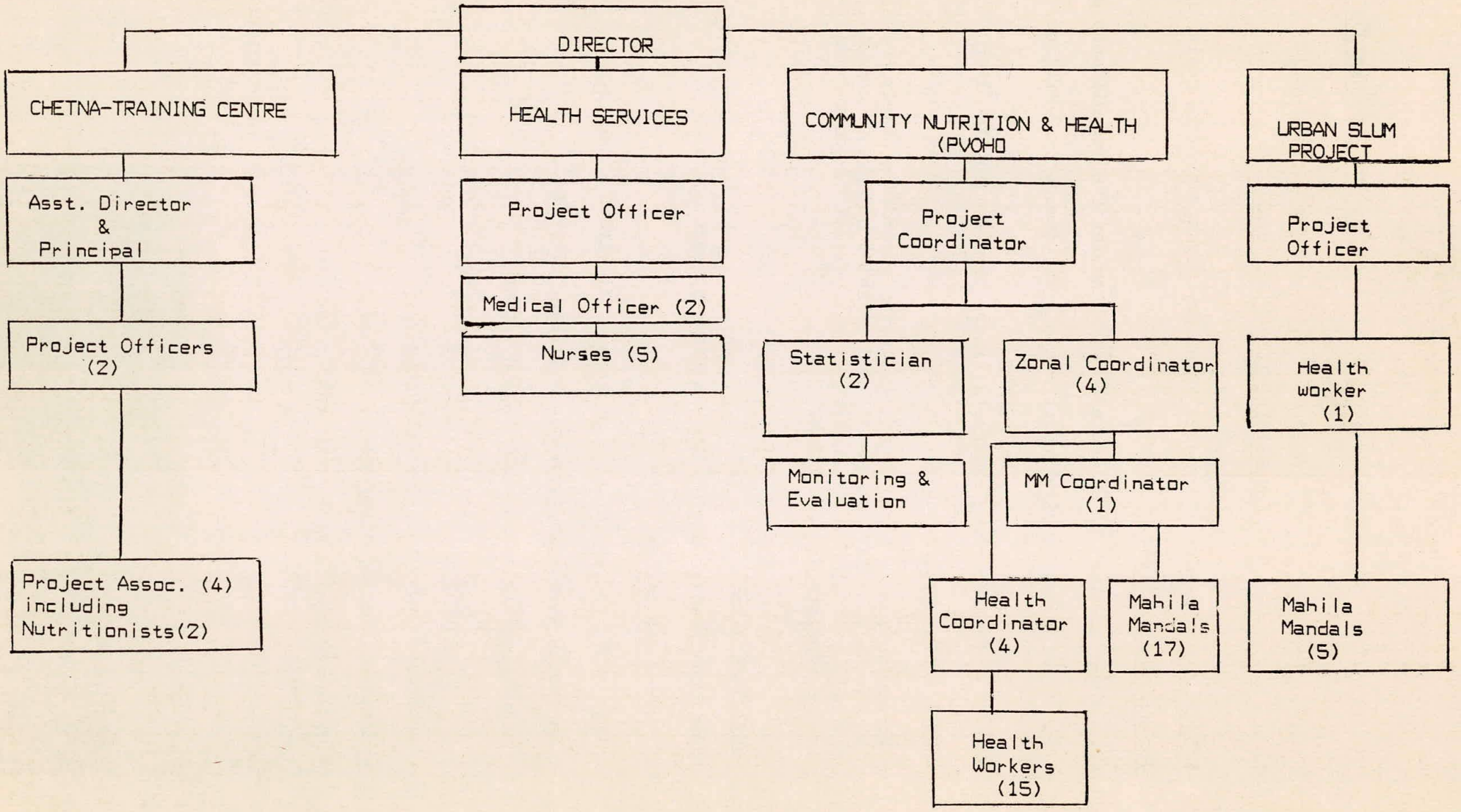
(Continued)

Annexure I

Health & Nutrition	Training AT CHETNA-CINI	Income Generation Agro and Farm based	Child Sponsorship & Family Helper Programme	National Training & Extension Programme on Smokeless Chullah	CINI Supported Extension Projects
5. Referral Services: Institutional (CINI) - Intensive care Pediatrict Unit (ICPU) - Nutritional Rehabilitation Centre (NRC) Supplementary Feed Production at Institute Headquarters Integration with ICDS Programme (An experimental effort to involve mothers in growth monitoring at ICDS - anganwadi) - Urban slum Tollyganj, Calcutta Research - ICMR - Nutrition Foundation of India	4. University students 5. Non-Government Organization Workers 6. Overseas Doctors				

2. ORGANISATIONAL STRUCTURE

CINI - Child In Need Institute



ANNEXURE III

JOB RESPONSIBILITIES OF KEY STAFF

Project Coordinator - Project Voluntary Organization in Health (PVOH).

Job Responsibilities:

- To plan, develop and maintain a data base for the surveillance area.
- Supervision and compilation of monthly and quarterly 'services' report.
- To identify programme management indicators and monitor them.
- To identify health indicators and evaluate programme impact.
- Co-ordination of three major activities under PVOH namely - health services, women's organization and training of various community members. It also includes financial supervision, administrative responsibility and reporting.

Zonal Coordinator

Educational background: Science or Home Science Graduate

Job Responsibilities:

- Implements and coordinates programme activities in her zone
- Quarterly work plan for various village clusters
- Monthly work plan for each health worker
- Posting of health workers in her zone
- Supervises weekly zonal meeting held at CINI
- Compiles monthly reports
- Trains community members at CINI - Chetna

(Continued)

Annexure III

Health Coordinator

Job Responsibilities:

- A senior and more efficient health worker of the zone
- Supervises other health workers' activity in the zone
- Organizes door to door survey for collection of demographic data
- Attends all the clinics and camps in her zone and functions like a health worker
- Prepares monthly report
- Trains mahila mandal workers at CINI

Mahila Mandal Coordinator

Job Responsibilities:

- A senior health worker or sponsorship case worker
- Goes around the villages, meets youth club members, panchayat leaders and influential ladies to organize mahila mandal in the village
- Registers mahila mandals with Registrar of Societies
- Supervises the work of newly trained mahila mandal mothers
- Co-ordinates the activities of mahila mandals
- Helps in establishing mobile clinics
- Participates in the clinics of the zone as health worker
- Trains mahila mandal mothers.

(Continued)

Annexure III

Nutritionist:

Educational qualification: B.Sc. Home Science and/or Diploma in Dietetics

Job Responsibilities

- Supervises health and nutrition education given by health workers in various clinics
- Organises food demonstration in clinics
- Supervises dietary management of patients admitted for nutritional rehabilitation
- Trains health workers and community members
- The Senior-Nutritionist is incharge of the communication wing
- Organizes exhibitions in fairs and social get togethers

Principal - Chetna Training Centre - CINI

Job Responsibilities:

- Organizes training curriculum for all levels of health and development workers in association with CINI Director
- Participates in the training programmes
- Clinical care of outpatients and inpatients

Medical Officers

Job Responsibilities:

- Attend static clinics and camps
- Care of patients admitted in intensive care ward and nutritional rehabilitation centre
- Train all categories of health and community workers

(Continued)

Annexure III

CINI Health Workers

Educational qualifications: Matriculate or S.S.L.C.

Job Responsibilities:

- Organize and run various services at static, mobile and mini-clinics and health camps, including treatment of minor ailments.
- May work as nurse in wards.
- Collect demographic data by door-to-door survey in new areas.
- Prepare monthly service reports for their village.
- Field training of mahila mandal mothers and other community members.
- Health check-up of sponsored children.
- May exchange role with child sponsorship case workers.
- Total number of such workers in 25.

PROJECT FOUR

PUBLIC HEALTH CENTRE

WEST MAMBALAM, MADRAS
TAMIL NADU

Contents — Page No.

I. OVERVIEW

The Public Health Centre (PHC) is a multi-discipline health institution situated in West Mambalam in the heart of Madras City. It came into existence in 1953 with the aim of serving the poor and low income groups living in the surrounding areas. The founders, who were all local volunteers and later formed a trust, identified three major objectives of the centre "to provide high-grade medical help to the poor and the low income groups; to involve the community in this service; and to depend as little as possible on the government for help".

The PHC, which began as an out patient service run by two doctors in a hut, has a well established set up for all major medical and surgical specialities in a 60 bedded in-patient service and an out-patient service with an annual attendance of over 36,000. Both are supported by reasonably well equipped diagnostic laboratories.

The Centre is managed by the Public Health and Welfare Society, a voluntary organization and meets its financial needs through charges on the services and voluntary donations.

Most clients of PHC are well educated and belong to the middle class.

II. CHILD HEALTH SERVICES

Services

Child care was initially provided by a pediatric clinic twice a week. In 1975, a full-fledged department was established under the aegis and guidance of Dr S. Jayam. At present the services provided by this department are:

a) Outpatient clinic

Daily outpatient services are provided in the morning and afternoon. About 35 to 60 children upto 12 years age are seen every day. They mostly come from areas within a radius of 5-7 kms, although some travel a long distance to avail of the services. Children are seen by a pediatrician for ailments, growth monitoring and immunization. After being seen by the doctor, mother and child go to the dietician who provides diet counselling. Immunization services are also available. Interrogation with mothers revealed that majority of children come for treatment of ailments (55%), followed by immunization (30%) and growth monitoring (15%).

b) In-patient services

PHC has an 8-bedded paediatric ward for sick children needing inpatient care.

c) Neonatal services

About 1500 deliveries take place in PHC every year. All neonates are examined and weighed. Common neonatal problems are managed in the lying-in ward. Emphasis is laid on the nutrition and health education of the post-natal mothers. Children born here form the bulk of outpatient attendance. The low birth weight babies (birth weight less than 2,500 gm) are identified and given special attention on follow-up.

d) Nutritional education

Three dieticians attached to this department provide nutrition education to mothers in the lying-in maternity ward and in the outpatient department.

PHC has formulated a nutritious cereal-pulse 'Nandini Mix' meant to be a weaning and supplementary food.

e) Correspondence course on mother and child care (Aalochana)

f) Sporadic activities

These include immunization campaigns, baby weeks, baby competitions, etc.

As can be appreciated the services are only centre-based. No outreach services are provided at present.

Staff

The key members of the staff include four paediatricians, three dieticians and one Auxiliary Nurse Midwife (ANM).

III. GROWTH MONITORING ACTIVITIES

Delivery of Services

Periodic growth monitoring is carried out in the out patient clinic. The Auxiliary Nurse Midwife (ANM) weighs children and plots it on the growth card. She does not give any advice which is left to the doctor. The child is also seen by a dietician in the adjoining room who performs other anthropometric measurements, viz. head circumference, chest circumference, mid arm circumference, length/height. She also maintains a duplicate record of weights. Nutrition education is given by the doctors and dieticians.

The recommended frequency of growth monitoring is: every fortnight upto three months; then every month till 12 months of age. The frequency of GM is variable after this age and it depends on the individual discretion of the physicians. PHC aims at GM till the age of 5 years.

The growth card and a health booklet are issued with initial entries at the time of discharge in case of children born at the PHC. For children born elsewhere the growth card is issued at the time of the first visit. Growth card and the health booklet are 'tickets' for seeking any service from the paediatric OPD of PHC.

In case a child is detected to have growth faltering or PEM, the mother is educated to provide adequate calories and proteins through a nutritious diet. They are advised to make fortnightly visits for monitoring growth. The diet advised usually consists of ingredients available at home except that PHC does recommend 'Nandini Mix' (a cereal-pulse mixture developed, manufactured and sold at PHC) as an additional nutritious, easily digestible food suitable for children. Supplementary feeding is not given at the PHC.

Although a great majority of children attending PHC belong to the neighbouring colonies, there is no effort in reaching them through extension services for the purposes of inducing mothers to bring children to the centre for GM or conducting GM at the households.

Tools

a) Growth card

PHC uses the 'Road to Health' card. It caters to children 0-6 years. The card has space for advice on breast feeding, solid

foods, immunization, family planning advice, reasons for special care, description of other family members and the problems on follow up.

As stated, periodic growth monitoring is available for low birth weight. The growth cards in use are not designed for this group. Since some of these babies may be premature, the growth curve in the card must also incorporate trend during last phase of third trimester.

b) Health booklet

A health booklet prepared by PHC is issued to the mothers at the time of discharge from the lying-in ward. This has provision for recording serial anthropometric measurements, milestones, immunization and subsequent problems and management. It does not have any growth card in it.

c) Anthropometry register

The dieticians maintain a duplicate record of the anthropometric measurements in the register which is kept at PHC. It has a copy of the growth card. Serial weights are supposed to be recorded in a tabular form as well as plotted in the growth card. Other anthropometric measurements are recorded in a tabular form.

d) Weighing scale

The PHC uses a platform type [Tulaman$^{(R)}$] machine made in Hyderabad which is normally used for bulk weighing at the godowns. The machine has a platform of 65cm x 42 cm and the

vertical bar of 111 cm. The machine measures the weights ranging from 100 gms to 300 kgs. It is an all-metal heavy instrument and cannot be transported from place to place.

The child is placed or made to stand over the platform of the machine and balancing is done by moving the pointer block over the beam. The zero error is corrected only by the mechanic sent by the manufacturing firm.

There is no practice of checking the accuracy of the machine with standard weights routinely. No significant breakdowns have been reported since this machine was installed over three years ago.

Impressions on growth monitoring Activities

a) Weighing activity

The pediatric out patient department is a relatively crowded part of the PHC. Mothers wait for their turn with patience. It may take upto 2 hours to have the child seen. The waiting period is not used for group discussions or any other form of health education activities.

As soon as the mother and child arrive there, the ANM weighs the child and plots it on the card.

Observations of over 20 children revealed:

(a) Child is weighed with clothes on. Older children are asked to remove shoes.

(b) Mothers feel the weighing scales are safe.

(c) Weighing machine is accurate and does not have a zero error.

(d) ANM is confident. She weighs and plots accurately.

(e) She does not interpret the growth lines and refers the child to the doctor and through him to the dieticians for nutrition and health education. They interpret the growth lines and talk to the mother regarding weight gain or weight faltering.

(f) Fifteen percent of eligible children attending the out patient clinic do not possess a card.

(g) Several anthropometric measurements besides weight are recorded, but apparently these are not being used for any definite purpose.

b) Action response

The doctors advise feeding and the management of morbidity, if any, in case of growth faltering or malnutrition. The dieticians reinforce the nutritional education with regard to the actual foods which should be given to the child.

According to the pediatricians, the children with deviant growth are called for more frequent evaluation. However, there is no separate clinic for them.

c) Frequency of monitoring

An analysis of the Anthropometry Register kept at the PHC was done (Table 2). The records of visits by 81 children, 7 to 9 month old at the time of the case study were examined. Each child paid a mean of 2.7 visits in comparison to an expected number of 10.5 visits as desired by the staff of the PHC. As many as 54 per cent of them had paid visits less than one fourth of the desired number. Thirty six per cent visited the PHC only once. This poor follow-up, according to the physician, might have been due to insufficient recording.

Our impression based on this data and the interrogation of mothers is that usually monthly visits are achieved in the first 3-4 months of life. Thereafter, the frequency declines.

TABLE 2

Break up of visits by 81 children aged 7-9 months

Number of Visits	No. of children who paid visits (n=81)	Per-centage
1	29	(35.8)
2	15	(18.5)
3	15	(18.5)
4	9	(11.1)
5	4	(4.9)
6	4	(4.9)
7	2	(2.5)
8	3	(3.7)

N.B.* Mean number of visits paid = 2.7 per child
* Number of visits desired by the staff of PHC = 10.5 per child

d) Objectives of growth monitoring pursued.

PHC pursues following objectives of growth monitoring in the present set up:

i) Early detection of growth faltering and malnutrition and follow-up thereof.

ii) Entry point and an effective vehicle for nutrition education and motivation of mothers, as well as for comprehensive health care activities.

iii) Identification and follow-up care of low birth weight babies. These children are the focus of more frequent growth monitoring (fortnightly) and more intense education of the mothers. Their follow-up is also inadequate after 6 months of age, although it is better than other children due to the extra effort. However, even this short period of regular growth monitoring serves a useful purpose; it provides sustenance and support for unhindered growth during a very crucial phase, thereby enhancing their chances of survival. Unfortunately, no domiciliary follow-up lis attempted.

IV. OBSERVATIONS OF STUDY TEAM

1. MOTHERS

The study team interviewed 60 mothers at the outpatient department (Table 2). All except 3 were literate and as many as 80 per cent were educated upto 12 class or more. They had paid a mean of 4.7 visits to the PHC.

It is noteworthy that none of the children attending PHC during our visit had grade III or IV PEM. Over half (55%) of them had normal weight for age.

Mothers were shown 3 cards with simulated growth curves, depicting normal, faltering and malnourished state. Significantly, 75.0, 66.0 and 70.0 per cent mothers could correctly interpret these patterns, respectively. Interestingly, over half of even those mothers who did not possess the growth card could also interpret the curves. A majority of mothers have fairly good understanding of the health education messages shown on the cards. The rationale of the periodic growth monitoring was clearly understood by almost 80 per cent of the mothers interviewed. They showed a remarkable degree of knowledge about normal feeding, duration of breast feeding, causes of poor weight gain and immunization. The awareness and preparation of oral rehydration solution was not encouraging, as also appropriate feeding during diarrhoea.

The mother-child pairs attending PHC belong to a relatively well-off group of population. It is indicated by the fact that they have to pay at least Rs.3/- for each consultation. They are also well educated and reside in the heart of the city. Thus, they have access to other means of communication, including lay press, television, radio, etc. Then there is the team of doctors and dieticians who lay special emphasis on growth and nutrition.

In the above scenario it seems but natural that KAP of mothers with regard to GM and other primary health care modalities would be of a high order. When questioned, mothers admitted that they had improved their understanding of child growth and feeding through the explanations given by the PHC staff.

Table 2: Assessment of mothers' KAP and skills

Variables	Percentage of mothers Responding in Affirmative(n=60)
(a) Growth monitoring	
- Growth monitoring is useful for my child.	90
- Understand purpose of GM	80
- Approve of monthly frequency of weighing	65
(b) Growth card	
- Produce growth cards	85
- Understand messages printed on card	70
(c) Causes of deviant growth	
- Lack of dietary intake	60
- Frequent or recurrent illness	70
- Failure of breast-feeding	15
(d) Feeding of children	
- Correct duration of breast feeding	100
- Correct age for additional solid foods(6-12 months)	80
- Appropriate foods from 7 months to 2 years:	
Excellent	25
Very Good	20
Good	20
Fair	20
Poor	15
(e) Diarrhoea management	
- Aware of ORT	60
- Know correct preparation of sugar-salt solution	40
- Diet:	
Same or more than that preceding illness	20
Decrease intake	20
Superstition about useful foods	20
(f) Correct interpretation of growth card	
- Normal growth	75
- Growth faltering	66
- Malnutrition grade III	70
(g) Skills	
- Weigh a child	15
- Plot a growth card	10

2. ANM

The ANM was interviewed at length. She has been working at the PHC for over three years but has been involved in the weighing activity only for a period of 5-6 months.

Her basic training of a total of 9 months is limited to maternity care only. On joining the PHC she worked in the pediatric wards and acquired experience in looking after children. Her training in weighing and plotting growth card is in-service and informal through interaction with the physicians and dieticians of the outpatient department. She is not involved in imparting health education to mothers. Also, her involvement with mothers appears to be quite superficial.

On direct questioning, it was found that she has a fair idea about virtues of weighing, causes and consequences of poor weight gain. Her knowledge is unsatisfactory with regard to infant feeding practices. She considers orange juice and carrot juice superior to rice and 'dal'. She identifies normal and PEM growth curves but not growth faltering. She believes in stopping breast milk in diarrhoea; curd in respiratory illness and buttermilk and rice in fevers. Her knowledge about immunization was excellent. She does not know the method of preparing oral rehydration solution. She is good at taking weights and plotting them on the card accurately. However, she does not have any concept of zero error. These lacunae indicate need for improved supervision.

3. DIETICIANS

The study team interviewed the 3 dieticians. They hold either a postgraduate degree in nutrition (2) or a one year diploma in nutrition (1). They only have a theoretical exposure to GM and growth cards. All of them are with PHC for the last 8 months.

The dieticians give correct interpretation of the sample growth curves. Although their knowledge of childhood nutrition is adequate, they do not know how to calculate the calories of common foods. They know the composition and method of preparation of ORS. They do not know the accurate method of taking mid-arm circumference. On direct questioning, they frequently admit that they are not satisfied with the type of work being carried out by them,. They prefer prescribing therapeutic diets in various systemic disorders, rather than feeding in infancy and childhood.

4. PEDIATRICIANS

The trained pediatricians of the PHC are the pivotal personnel responsible for the services rendered to the children. We interviewed two of them (the other two, including their chief were unavailable).

The physicians have sound knowledge of their subject as a whole. They sincerely believe in the role of GM as a critical tool of primary health care and are committed to using it in day-to-day care. Their interpretation of normal and deviant growth is impeccable. Their action response is appropriate. They emphasise the role of the mother and overwhelmingly subscribe to the philosophy of preventive and promotive health care.

However, their role in supervision and in-service training (of ANM and dieticians) leaves much to be desired.

V. TRAINING

PHC does not organise any regular training programmes. The training of different staff members is already discussed in respective sections.

VI. COMMUNICATIONS

Following tools of communication are employed at the PHC:

1. Posters

Posters in Tamil and English are put up on the walls of the outpatient department. They deal with ORT, immunization and feeding. There are none on growth monitoring.

2. "Aalochana"

This is a UNICEF supported correspondence course started in 1983. The objective is to impart knowledge on mother and child care to the target group of prospective mothers. A fee of Rs 75 is charged for 12 lessons. The contents of the lessons include antenatal care, childhood feeding care of low birth weight babies etc.

VII. COMMUNITY PARTICIPATION

A parents' club consisting of about 15 mothers of children born at the PHC was started about two years. They meet once every 2 months informally with the pediatricians of PHC to have a dialogue to solve problems encountered by them in rearing their children.

VIII. SUMMARY: STRENGTHS AND CONSTRAINTS

Since the educational and socio-economic background of the mothers is of good standard, the Public Health Centre, Madras, is not found to be an appropriate model for assessing the role and use of growth monitoring in the setting of an outpatient clinic in a peripheral urban location.

The babies born at the PHC are introduced to the concept of growth monitoring and the use of a growth chart for achieving optimal growth in the lying-in ward when the motivation is very high. The interrogations of some mothers whose babies were born in Public Health Centre, indicated that most of them do achieve an understanding of the growth card and feeding. A high GM coverage is achieved during first 3 to 4 months of life, the follow-up declines thereaafter. All but a few children who attend Public Health Centre outpatient clinic, are issued a card and weighed. Nutrition education receives a key place in the clinic. Those who do come for regular growth monitoring receive intense education and fortnightly followup's. The low birth weight babies are given more attention and emphasis but there is no domiciliary follow up.

Weighing at birth at PHC ensures identification of the low birth weight babies. Extra attention, more intense nutrition education to mothers and a fortnightly growth monitoring especially for first few months contributes significantly to enhanced chances of survival. The monitoring of low birth weight babies can be strengthened through domicillary visits.

The question arises - can growth monitoring be practiced in its true sense in an outpatient clinic setting? It is difficult to expect children born at the Centre but living far away to visit every month for weighing. However, regular monitoring for growth can be extended to the neighbouring locality. The education targeted to these areas could motivate them to bring children to the clinic for weighing and with some rationalization of duties of the available staff, home based activities are possible to incorporate.